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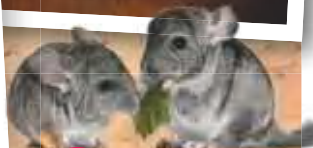
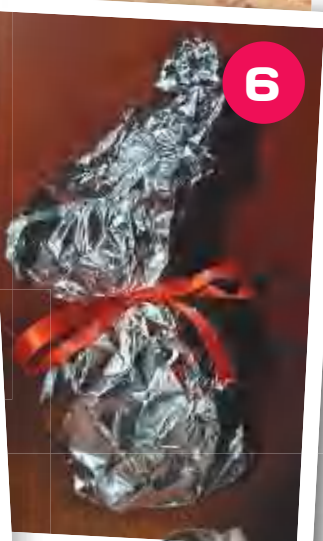


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small furry Pets



Hello!

With the stirrings of spring becoming ever stronger, we have a timely article in this issue looking at the care that rabbits require not just at Easter, but throughout the year. Sadly, too many end up in rescues simply because people have not spent enough time considering what is involved in their care - or the cost. Not that rabbits are unique in this respect of course, and as Susie Kearley reports, guinea pigs are also frequently given up by owners who failed to appreciate their care needs fully.

Unfortunately, it's probably partly a reflection of the size of small furry pets that leaves them so vulnerable to being abandoned into the care of rescue organisations, combined with a perception that they are easy to look after, compared with other pets such as dogs. The question is - are they therefore attracting less enthusiastic pet-seekers?

There's the common scenario that anyone who has worked in rescues will be very familiar with - the children reach an age where they nag for a dog, but the adult/s in the family don't want to take on that responsibility. Instead, a family compromise is reached, and the focus switches to choosing a small pet.

Once the children get bored with their pet though, the parents seek to end the association and take the animal/s to a sanctuary, never having been fully wedded to the idea of pet-ownership in the first place. Cynical? Perhaps, but it's also sadly true.

It makes it all the more important for everyone who cares about the welfare of small pets to make sure that new owners are fully aware of what is involved in their care, before they acquire any small furry pet (or indeed pet - period!).

Now, here's a personal question for you - are you planning a bout of spring cleaning shortly? If you have household pets, then don't miss the opportunity to take part in our competition to win a special Dyson vacuum cleaner, to help keep your home looking spotless. Good luck!

Editor
Email: sfp.ed@kelsey.co.uk

David Alderton



Order your copy of *Choosing & Caring for Small Furry Pets* today!

*100 pages, fully illustrated in colour throughout. Call the order hotline on 01273 233746 or order online at <http://www.petinfoclub.com/Shop.aspx> with the cost being £6.99 + £2 p&p for the UK. (Overseas rates vary).

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Take advantage of our special subscription offer, saving you up to 22% off our cover price, and have your copy of *Small Furry Pets* delivered regularly to your home.



*Main cover photo of a Brazilian guinea pig by Dmitri Gomon/www.shutterstock.com

News round-up

Each issue features news from around the world, keeping you up-to-date with all the very latest information about small animals.



Visit the National Pet Show London 2016!

Taking place on May 7th and 8th at ExCel London, the show is the perfect place to meet a menagerie of animals. If you love small furry pets, make sure you don't miss out on the chance to meet some cute and cuddly companions in the Burgess Small Furrries zone. Here you will have the opportunity to get up close with rabbits, guinea pigs, hamsters, rats, degus and chinchillas and there's a whole range of exciting activities for adults and children to see and get involved with, relating to small furry pets.

Get advice from the experts on which small furry pet would best suit your lifestyle and how to keep them fit and healthy. Each of the pet zones at the show has its own feature areas with demonstrations, talks, animal action displays, goodies and gadgets to buy, plus advice from leading animal experts and top UK animal charities.

Among the other highlights is your chance to see the star of Channel 4's *Supervet* series, Professor Noel Fitzpatrick, who will be appearing

as part of the Eukanuba Supervet Live Tour. As well as giving talks on advances in the veterinary profession and recounting success stories from the popular television show, he will also be

taking part in a Q&A session at the end. There's also the return of the ever-popular rabbit jumping competition, allowing you to cheer on your favourite entries!

At a glance

The event is taking place in London's Docklands.

When: 9.30am-5.00pm, Saturday 7th and Sunday 8th May 2016.

Where: ExCel, One Western Gateway, Royal Victoria Dock, London, E16 1XL.

Admission: Advance ticket costs: Children £12 (under 5s go free), adults (16+) £17, seniors (60+) £14, family £52. All prices plus booking fees. Under 5s are free.

Getting there: The venue is served by excellent transport links, being easily accessible via three onsite DLR (Docklands Light Railway) stations that form part of the London Underground network, plus there is parking for 3,700 cars and London City Airport is just 5 minutes away. See <http://excel.london/tube-dlr-and-overground> for more information.

Further information: Keep up-to-date with the event through the website at <http://www.thenationalpetshow.com/> and you can also sign up for the newsletter.



Rabbit jumping has become a popular spectator sport.

A breakthrough for pet owners

Do you struggle to keep your house clean with animals and an ordinary vacuum cleaner? Help is at hand, with the launch of the Dyson Small Ball™ Animal, which is a brand new ultra-lightweight and powerful compact vacuum cleaner. It comes with an impressive five year, no quibble parts and labour guarantee.

According to the manufacturer, long hair and pet fur are easily dealt with by the Dyson Small Ball™ Animal vacuum. The accompanying Dyson Tangle-free Turbine tool is the only turbine tool that effectively removes hair from surfaces without tangling. Other turbine tools leave you tugging out the tangles: hair wraps around the brush bar slowing it down and over time, this will stop it from working all together if it is not removed.

Dyson has always had our furry friends at the front of its mind when developing its technology and this machine is great for cleaning up the likes of rogue kibble, escapee fur, or the remnants of those new pet toys that didn't last all that long. So certain it would do everything promised, Dyson sent us one to test, and here's how it performed in a multi-pet household.

Amazed by the results!

To say Mr G. and I had different approaches to cleaning would be a understatement; in his case, a quick run around with a vacuum every few weeks would suffice. For me, I'd love the time to do it more than once a week.

When I moved in with Mr G. many years ago, he had a upright Vax hoover. It weighed virtually as much as me and was almost as tall. Needless to say not much hoovering was done in our house at that stage.

When the time came to replace our carpets, we purchased a cordless Dyson and I quickly fell in love with how light and nimble it was. It was great on our hard and tiled floors. Its only downfall was on our thick fluffy carpets. This cordless model seemed to lack the requisite power and although using it weekly, I felt that the carpets were never really clean, even when using the maximum power setting. With me having long hair and a fluffy Pomeranian in particular roaming about, as well as our other pets, the cordless Dyson was underwhelming on that type of flooring.



So when the opportunity arose to try a Dyson Small Ball™ Animal, despite being skeptical about having another upright, I jumped at the chance to leave the cordless model behind.

It has to be said at this point that Mr. G and I also differ when it comes to setting up new products. I never read a manual and charge into it, relying on feminine logic, whereas he prefers to studiously read the manual from cover to cover before starting. Needless to say, when the Dyson Small Ball™ Animal arrived, I therefore ripped opened the box and dived straight in, to start putting it together.

I am pleased to say that the Dyson Small Ball™ Animal is quick and easy to assemble (without reading the manual!). It is also light to carry (probably about the same weight as my Pomeranian) which was a nice change, when taking it upstairs.

Despite my regular weekly vacuuming, the Dyson Small Ball™ Animal showed within minutes just how ineffective my cordless model had been! It was amazing how much dirt came out of the bedroom carpet on my first lap around! The Dyson Small Ball™ Animal has a long lead which is helpful, so that you don't have to keep changing plug sockets whilst using it. It was also great on our tiled and wooden floors, and I was struck by how quiet it was as well.

Smaller than our previous Vax and with a ball system, it has proved to be much more



nimble than our last upright. In addition, it is easy to store in a small space, as the handle is retractable. The Dyson Small Ball™ Animal also has an extendable wand that is great for dusting places that could otherwise be hard to reach.

Furthermore, it comes with a tangle-free turbine head that is perfect for long hair, as the brushes are designed to stop this clogging the head up. That said, the standard cleaner head is really good as well. It has clips which make the head easy to get into and 'de-fur' the filament. The bin can be emptied easily and hygienically too.

In summary

I really liked this new Dyson Small Ball™ Animal vacuum. On carpets, it is far superior to my cordless vacuum, cleaning them thoroughly and picking up the hairs from our assorted pets very effectively. The only downsides of this upright are that it struggled to get under the low bed (where the cordless model excels), and perhaps unsurprisingly, the stairs are much easier to vacuum with the cordless. If I lived in a carpeted flat with furry pets of whatever type, this model would be top of my 'to-buy' list, and it's the one that I intend to stick with going forward.

Your chance to win a Dyson Small Ball™ Animal vacuum worth approximately £400!

All you need to do is to complete the entry form below, and send it off to the address here. Last date for the receipt of entries is Friday, April 15th 2016. The first correct answer drawn at random from the entries received by the closing date will be the winner.

Post this completed entry form to: *Small Furry Pets*, Dyson Small Ball™ Animal competition, Kelsey Publishing Group, Cudham Tithe Barn, Berry's Hill, Cudham, Kent, TN16 3AG.

Question: *How much does a back issue of this magazine cost to order, including postage and packing, for delivery to a UK address?*

The answer is:

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Please help us to shape the magazine to what you want to read, by answering the following questions:

❖ I keep (please cross out those groups not applicable): rabbits / guinea pigs / hamsters / gerbils / rats / mice / chinchillas / degus / ferrets / others – please specify.....

❖ I have been keeping small furry pets for..... years

❖ My favourite article in this issue is:

❖ In a future issue, I would most like to read an article on:

❖ I also keep (delete if not applicable) aquarium fish / reptiles / birds / cats / dogs

Note: The judges' decision is final. No correspondence can be entered into. The name of the winner will be published in a future edition of *Small Furry Pets*.

☐ I do not wish to receive information from Dyson.



Even with regular grooming of your pets, there will still be hair shed around your home.





Create your own Easter chocolate bunny

Here's a great idea with Easter coming up – but as **Susie Kearley** discovers, there are some potential pitfalls that you need to be aware of ...

When David, the editor, asked me whether I'd like to make my own chocolate bunny for the Easter edition of the magazine, following on from our guinea pig Christmas cake, I thought this will be pretty straightforward, and set out to find a chocolate rabbit mould.

After several weeks of searching in all the local shops, I'd found a Doctor Who mould, a teddy bear mould, a dinosaur mould, love heart moulds, trains and butterflies - even Easter egg moulds - but could I find a chocolate rabbit mould? Well, only in Poundland, and their mould really wasn't what I had in mind. If you want to make a rabbit-shaped jelly, there are moulds everywhere! But those moulds are a bit large for a chocolate rabbit.

So having given up on Buckinghamshire's high streets, I took to the Internet, and discovered rabbit moulds galore on Ebay. It turned out that it's actually cheaper to buy a ready-made chocolate rabbit, but you can't put a price on creativity, can you? With a chocolate rabbit mould ordered on the Internet, I waited patiently for it to arrive, and then a week later, I finally got started!

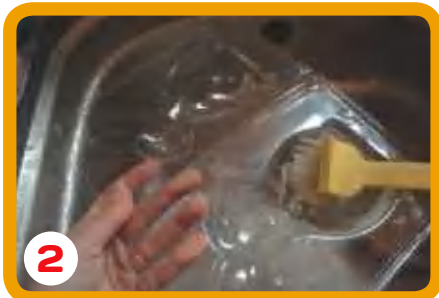
Why make your own?

The perk of making your own chocolate rabbit is that it's solid, so you get a lot more chocolate than you would from a hollow rabbit bought from a shop. You can also make it from your favourite type of chocolate – based around plain, milk or white variants - and add any other ingredients you wish, to make your chocolate rabbit taste more interesting.

It's great for friends too, as you can make chocolate rabbits with their favourite ingredients, and with a mould, you can obviously produce a number of different rabbits as well, so no-one needs to feel left out!



Susie finally found a rabbit mould on the Internet.



Cleaning the rabbit mould.



Choose chocolate to suit your taste.

Ingredients

- Lots of your favourite chocolate!
- Raisins (optional)
- Nuts (optional – and bear in mind allergies)

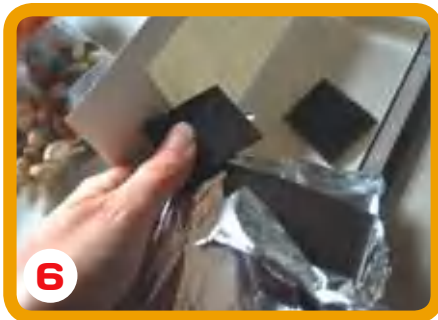
The quantities needed will depend on the size of your mould, and whether you decide to make this a 'fruit and nut' rabbit or a simple chocolate one.



Fruit and nuts can be added.



The glass Pyrex jug needed to be stood in the saucepan.



The chocolate was broken up into squares.

Take care and beware!

Always seek the help of an adult member of the family before attempting to make your Easter chocolate bunny. You need to use a cooker and boiling water, plus there will be hot, runny chocolate, which could also burn you badly.

Step-by-step

I decided to make a healthy-ish chocolate rabbit with 85% chocolate solids, plus dried fruit and nuts. The first task was to wash the mould. The packaging said to wash it thoroughly. I guess this was to remove any unwanted residues from the manufacturing process. So after being washed and brushed in water and then rinsed off, my rabbit mould was looking good. I dried it with a tea towel and went to heat the chocolate.

Now my husband had already warned me that you can't just heat chocolate in a pan - it burns! So I put a thick Pyrex measuring jug inside a large saucepan, and poured boiling water from a kettle around it into the saucepan, being careful not to get any in the jug itself. This created a hot, dry environment inside the jug, where I could melt the chocolate without burning it.

I turned on the hob, and broke up 500g (1.1lb) of chocolate, placing it piece-by-piece into the jug. Then I waited for it to melt. It took a surprisingly long time! I let some of it melt before adding more, but I'm not sure that's really necessary.

Do take care when the water starts

bubbling. If the heat is turned up too high, or you've put too much water into the saucepan, it might boil over. Mine did! The hob went out and I ended up nearly filling the kitchen with gas as a result. If that happens, swiftly turn it off, lift out the jug and put it somewhere safe on a surface that won't be affected by the heat. Then carefully pour out some of the water from the saucepan, before replacing the jug and switching to a different hob.

You need to stir the chocolate occasionally, and poke more chocolate solids into the melted chocolate, so it all melts evenly. When the chocolate is all liquid, add some dried fruit and nuts if you want to. Mix well at this stage.

Then remove the chocolate mix from the heat, and ensure your rabbit mould is level. Mine needed propping up at the ear end, to prevent the chocolate from all flowing into the ears, and leaving the rabbit's lower parts a bit short! It is a good idea to check that it is level right at the outset. In the end, I had more than enough molten chocolate mix.

When you've filled the mould, leave it to set. I put mine in the freezer to speed this up.



The broken pieces of chocolate in the jug in the saucepan.



Adding in more chocolate.



Stir in the fruit and nuts.



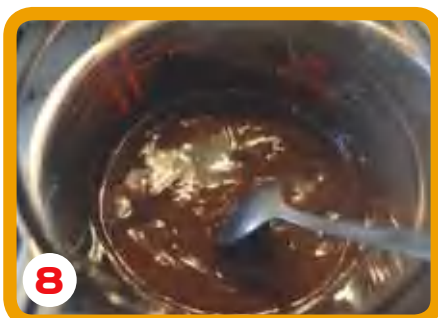
The chocolate melting in the jug.



The melted chocolate needs to be kept stirred.



The nuts and fruit are stirred in completely.



The chocolate has melted down completely.



Adding the fruit and nuts.



The mould is now level and the chocolate can be poured into it.





15
The mixture being poured carefully into the mould.



17
The mould having been in the freezer, with the chocolate now set.



16
The mould with the mixture in it.



18
The rabbit in two halves, having been taken out of the mould.



19
The rabbit with the unwanted bits at the side broken off.

Freezing your chocolate rabbit?

Why would you want to put your chocolate rabbit in the freezer to set? Well, apart from being impatient and wanting your rabbit to set quickly, there is some controversy around heating foods in plastic - especially fatty foods.

Most plastics contain a chemical to make the plastic flexible, called BPA. It's a known hormone disruptor, and some health specialists say you should never heat foods in plastic because a tiny bit of BPA from the plastic leaches into your food. The same would apply to hot fatty foods like chocolate, placed in a plastic mould.

Now, being a bit of a health fanatic, I'm keen to keep my BPA intake to a minimum, so the faster the chocolate sets, the less time it will stay in contact with the plastic. Hence why I chose the freezer. It actually worked well too. Despite some chocolate escaping and running out of the mould, I did get the results that I wanted overall.

The final result

Once your chocolate rabbit has set, carefully remove it from the mould. If the chocolate has run over the edge at all, just break or cut those bits off carefully. It's remarkable how nicely your rabbit can turn out even if you've had some mishaps along the way, so don't be discouraged!

Admittedly, the two halves of my rabbit didn't fit together as well as they might have, if I hadn't over-filled the mould. The rough edges of the nuts didn't help either! But it's a learning experience. At this stage, you could quit while you're ahead, start munching and try again, or you could wrap your rabbit in foil and give it a pretty bow! Good luck! ■



The chocolate rabbit wrapped up in foil and decorated with a piece of ribbon.

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On the wild side

We typically think of guinea pigs and chinchillas as pets, but what about their wild cousins? **Susie Kearley** investigates.



PHOTO COURTESY OF THE AUTHOR.

Wild cavies still live in parts of South America, but guinea pigs - the domestic variety that we know - do not exist naturally in the wild. They had already been domesticated as a source of food in their homeland, long before they were first brought to Europe, and this had transformed their appearance.

There are also wild chinchillas in the Andean region of Peru, Bolivia, Chile and Argentina, although they were heavily hunted for fur in the late 19th and early 20th centuries, and their habitats have also been destroyed, so they are now endangered species. Unfortunately, their numbers are still declining in the wild, but conservation efforts are being made with the aim of reversing this trend.

Wild cavies

The species of cavy encountered in the wild are neither as colourful nor do they have the interesting patterns and coat

variations as displayed by the guinea pigs that we have as pets. This is because domesticated guinea pigs have been selectively bred here in Europe, for their pretty colours and fancy coats.

Wild cavies are quite plain in appearance, having a coat often described as 'agouti brown'. Agouti is a common pattern in wild rodents generally, although this may not be instantly apparent, especially as this patterning can be duller in some cases than others. But if you look closely at the individual hairs making up the coat, you will see the alternate dark and light banding running down here.

This colouration helps them to blend into the background in nature, which is just as well, because cavies, like other rodents, are prey animals, so this vital camouflage helps them to survive. They live in the Andean mountains and upland grassland plains in parts of Brazil, Uruguay, Argentina, and Peru.



The typical agouti coloration of wild guinea pigs. Their head shape tends to differ from that of their domestic cousins.



Above: Wild guinea pigs will instinctively hide away.

Left: Typical wild cavy habitat in Peru, on a mountainous grassy plain.

Below: There is still confusion between the different species of wild cavy. This is the species described as the Brazilian cavy (*Cavia aperea*).

caught by predators, ranging from wild cats and foxes to birds of prey.

Just like their domesticated cousins, wild cavies are herbivores. They live together, grazing on vegetation, and find shelter in the burrows of other animals, as well as hiding among rocks and in vegetation. This instinct to hide has been passed on to domestic guinea pigs, who are naturally drawn towards tunnels and hiding places. Wild cavies create routes through the foliage, and eat leaves, grasses and some flowers.

They live in family groups, usually consisting of a number of sows, a single boar, and their young. Wild cavies tend to be most active at dawn and dusk, perhaps because in the bright sunshine of daytime, they're more vulnerable to predation.

Medicinal uses

Hunting by humans is also a threat to wild cavies. They are highly regarded as a source of good food in many parts of South America, which is what led to them being domesticated in the first place.

An identity crisis!

There is actually quite a lot of confusion surrounding 'wild' cavy populations, which has yet to be resolved. Some supposed species, such as *C. anolaimae* which is to be found in Colombia near Bogotá, and *C. guianae*, which lives in southern Venezuela, Guyana and areas of northern Brazil, were first identified in the 20th century. Yet both are thought to be the feral descendants of domestic guinea pigs which escaped or were reintroduced into the wild. There may be six true species, occurring in the wild.

The latest scientific studies into the guinea pig's ancestry have combined DNA investigations with anatomical comparisons of skull and body shapes of both living wild and domestic cavies, as well as older mummified examples found in parts of their South American homeland. The results strongly suggest that our pet cavies (known as the species *Cavia porcellus*) are descendants of the wild montane cavy (*Cavia tschudii*) whose range extends from Peru southward to the Tarapacá region of Chile and the Tucumán province of Argentina, although other species may also have contributed to its development.

Lifestyle

The montane cavy is found at an altitude of 2000-3800m (6500-12,500ft) above sea level, thriving in relatively moist rocky habitats, where there is rough

vegetation present. These wild cavies might live for between one and four years. While this is not usually as long as their domesticated cousins, their mountainous and grassland habitat brings the obvious risk of being



An innovative display of wild cavies, to be seen at Amazon World on the Isle of Wight. PHOTO COURTESY OF THE AUTHOR.



Above: Domesticated black guinea pigs - as well as their wild relatives - may be used in gruesome divination rituals to detect illness.

Some practitioners of traditional folk medicine in the Andean mountains think wild cavies can help them to identify the cause of disease by squealing at the source of the illness in someone's body. Domesticated guinea pigs are regarded as being just as good at this as their wild counterparts, and black guinea pigs are particularly valued for this purpose. Unfortunately, it is also considered acceptable to cut the unfortunate animal open to establish whether the cure has been effective.

Communication

Wild cavies grunt, gurgle, chatter, growl, and rumble to each other when communicating with each other. A pecking order will develop, where submissive cavies will lower their head, allowing a more dominant cavy to take his hierarchical position. This probably sounds familiar to anyone with a pair of guinea pigs, where one is always the dominant piggy!

When they mate, the gestation period of female cavies lasts between 60-70 days, usually lasting on average about 63 days. Females usually have between one and four babies, who are born furry and

look like miniature cavies. They grow up fast and can become mature at two months of age.

Early days

Today's guinea pigs may originate from the first domesticated cavies, bred for food by South American tribes, around 7000 years ago. The Moche tribes in ancient Peru worshipped animals and frequently depicted guinea pigs in their artwork. Selective breeding began as long ago as 1200 AD, resulting in different varieties of domestic guinea pigs, many of which probably still exist today, at least in terms of localised South American populations.

Guinea pigs came to Europe with traders and were quickly

Below: A wild cavy tucks into a meal of hay. Their feeding requirements are similar to those of their domesticated relatives.



adopted as a popular exotic pet. Queen Elizabeth I even had one, which raised the profile of these rodents amongst the wealthy in society who could afford them. Wild strains, descended from zoo stock, are kept by some breeders here in the UK, and are occasionally offered for sale.

Wild chinchillas

Chinchillas are natural residents of the Andes of Peru, Bolivia, Chile and Argentina. The short-tailed chinchilla (*Chinchilla brevicaudata*), has been so heavily hunted that it is now endangered in the wild.

Its long-tailed relative (*C. lanigera*) is also endangered, and these chinchillas were thought to have vanished entirely from their original range in Chilean Andes, until they were rediscovered during the 1970s. Even now, however, their numbers are still in decline, and their future is far from assured.

The biggest reason for the historic decline of the wild chinchilla populations was the hunting and trapping of the animals for their fur. Literally millions of chinchillas were killed in the late 19th and early 20th centuries for this purpose.

Today, approximately half of all wild chinchillas live in a protected nature reserve. An additional 5,000 live on private unprotected land. Hunting is now forbidden as they are protected species.

However, there is still demand for chinchilla fur coats. It is said to be "among the most expensive and rarest fur in the world" according to the Save the Wild Chinchillas campaign. Even within the protected reserves, chinchilla numbers are in decline, and it's not clear why. It could be a reflection in part of continued illegal hunting.



Above: Agouti pattern can still be seen in some domestic guinea pigs, as in this case, reflecting their origins.

Lifestyle

Undoubtedly, chinchilla habitat is still being destroyed in various areas, resulting in a further reduction in the population. The impact of grazing animals on their food supply, land clearance and mining all harm the environment of these rodents.

Chinchillas are nocturnal creatures who prefer to live in colonies. The gestation period of females lasts for approximately 111 days, and their broods are usually small, being consisting of just one or two youngsters. As in the case of guinea pigs, young chinchillas are born furry, with their eyes open, and they are quite active from birth. They reach sexual maturity at eight months.

Their habitat is about 5000m (equivalent to three miles) above sea level, and the climate is dry, with low humidity. It is a harsh, windy, cold and

dry environment, with little vegetation. There are some shrubs, grasses, and cacti in the rocky terrain, which is covered with volcanic ash. Chinchillas bathe in this ash, which helps to keep their dense coats in good condition.

Threats to their survival

Animals that pose a threat to chinchillas here include snakes, pumas and birds of prey, with the chinchilla's natural instinct being to hide in burrows and rock crevices, in the absence of any dense vegetation. They live in herds, being sociable creatures by nature, and they have a system to warn each other against



Above: Baby chinchillas are born fully developed, after a lengthy gestation period. Litter size is also small in these species. This is characteristic of rodents belonging to the caviomorph group.

Left: The chinchilla's dense, soft coat helps to protect it in the cold of its native environment.

predators and other threats. Like meerkats, they adopt a 'look-out' policy, with one chinchilla on duty to alert the others to potential threats while they may be feeding or are otherwise distracted.

Chinchillas sleep during the day and emerge at night when it is safer to gather food in the open. They are strict herbivores and their diet in the wild is bland, consisting of leaves, cacti, berries and grasses. Their water source is dew lapped off the rocks at dawn.

Most chinchillas burrow to make tunnels, often around the cardon plant (*Puya berteroniana*). A small number of chinchillas live in small openings among the rocks. Chinchilla trappers have enticed or forced chinchillas out of their protective burrows, and destroyed their habitat, sometimes using smoke, fire and explosives to force them from their homes.

Chinchillas are social by nature, and should not be kept singly.



Large stands of puya plants can provide valuable protection for chinchillas, whose tunnels lead deep under the plants.



The resulting stress and homelessness for chinchillas who escape the poachers, results in disruption to their lifestyles and reproductive habits. With their tunnels being blocked, so their primary method of escape from predators is lost.

Breaking up communities

Despite conservation programmes, wild chinchilla populations have not grown again as expected, so more active management techniques are proving necessary to help these rare rodents.

When their habitat was cleared for hunting, mining or farming purposes, this created a series of small, fragmented habitats.

The result was to isolate the chinchilla populations, leaving gaps between colonies, which prevented them from mixing and interbreeding. It also meant that confined to small spaces, they would be more vulnerable to predators.

More work is therefore urgently needed to create safe corridors



Did you know?

The origins of today's pet chinchillas date back to 1923 when Mathias F. Chapman, a mining engineer, brought 11 of these rodents back to the USA. He carried them down the mountains slowly, allowing them to acclimatise. His ship conveying them back to California carried ice, so they were kept cool on the journey. A female gave birth to a youngster whilst on the boat.



A Wilson white chinchilla which is a year old.

Initially, however, chinchillas were farmed for their fur, and it was not until the 1960s that they started to be kept as pets. Prior to this, a number of different colour varieties had already emerged. These were named after the breeder who first reported them, and they still have these names today, such as the Wilson white strain.

Left: Sightings of chinchillas in the wild can sometimes be confused with those of viscachas, although their coats are yellower and their ears appear narrower and longer.

between breeding populations and to bring different colonies back in touch, to ensure the survival of the species. If chinchillas do not have to cross hostile, unprotected areas of land in order to reach potential mates, then the situation may improve.



Above and left: A viscacha seen at close quarters, compared with a chinchilla. Viscacahas are not kept as pets.

Assisting the survival of chinchillas

Conservationists are actively trying to extend habitats, create corridors, and increase the opportunities for these species by careful land management. This should reduce existing barriers to mating, and lessen competition for resources, so chinchilla populations can start to grow again over a wider area.

The official conservation goals of Save the Wild Chinchillas, Inc, are stated as follows: "To ensure that these endangered animals do not become extinct. In order to meet this goal we have three objectives: educate people of all ages, collect funds to protect land and create sustainable preserves, promote awareness, and foster research."

Save the Wild Chinchillas, Inc, is a

not-for-profit organization formed to aid in conservation of wild chinchillas. Group members are working with the authorities and schools in Chile, to spread awareness amongst local people about how to help chinchillas, improve their existing areas of habitat, and to avoid doing anything that might hurt them.

They undertake school visits, and provide educational material to schools and locals, as constant reminders to look after the chinchillas.

Conservation for all

The group has also introduced a range of proactive, innovative policies to help to save these rodents. As part of this programme, Save the Wild Chinchillas opened a plant nursery in the year 2000, and started to grow native plants for the chinchillas.

Volunteers planted up routes between known areas of chinchilla habitat, connecting them with vegetation, so the rodents can move about more safely and interbreed with other colonies. Plants that chinchillas depend on will serve to compliment and allow expansion of colonies, creating corridors between habitats. This plan to expand chinchilla habitat by this means is ongoing.

Local people and volunteers from around the world have helped with the project, using more than 5000 chinchilla-friendly plants. This work also helps to preserve nine threatened species of flora including shrubs and trees, and assists other fauna too, with 17 threatened animals in the area, including amphibians, birds and mammals.

As examples, the puma, two fox species and a small endangered cat species are benefiting too. The long-term hope is to restore the ailing ecosystem, regenerate local flora, and restore biodiversity for the benefit of all species. For more information or to donate, visit www.wildchinchillas.org ■



Chinchillas can use their height to sit up and see what is going on around them.



A crib of young 2-3 week old abandoned flying foxes receiving care in Australia. Several organisations around the country are devoted to the care and rehabilitation of these misunderstood mammals. PHOTO COURTESY WCAWIKIINFO.

Talking bats

Over the course of previous issues, we've often covered rescue centres that cater for a variety of small furry pets and wildlife, but here is probably the most unusual that we've featured to date! **Victoria Neblik** asks the questions.

In an internet overloaded with cute small animal videos, there is one group that do not receive anything like the adoration that they deserve: bats. Now a group on Facebook has set out to change all that; with a seemingly limitless stream of endearing bat videos and inspiring stories about the rescue of the animals involved, the group known as Batzilla the Bat offers considerably more than your average wildlife site.

The driving force behind the site is Mrs Denise Wade. She is a devoted conservationist and Flying Fox Rehabilitation Coordinator for the Australian charity Bat Conservation and Rescue Qld Inc. (BCRQ).



A female flying fox flying with her youngster. The single offspring is carried in this way by its mother for the first month of life.

Q : A quarter of all mammals are bats; they are important pollinators for a range of plants and their body functions in a way that is unique if not more than a little bizarre. But despite all this, they are not the exactly the planet's most popular small furry creatures - nor are they the most obvious choice for somebody seeking to conserve wildlife. So what first attracted you to bats and how did you personally get involved in the field of bat rescue?

A : I have always had an interest in wildlife rehabilitation and once our children reached an age of independence, I decided to look at different species with a view to rescue, raising, rehabilitation and release work. Just by chance, I happened to visit a flying fox display one weekend and fell head-over-heels in love with these particular bats.

Once I found out about the hazards faced by flying foxes and the urgent need

for rehabbers, I decided that this was the job for me and I have been a bat lady for the past nine years! It is not always easy work and the suffering and cruelty is heartbreaking, but I do feel that I am making a difference in the lives of many bats, and the good days far outweigh the bad. I also write the instruction manuals for the organisation, am involved in member training and mentorship and I run the family-friendly bat education page on Facebook entitled 'Batzilla the Bat'.

Q : How many bats do you typically have at the Queensland rescue centre at any one time?

A : As BCRQ is a full self-funded volunteer organisation, we sadly don't enjoy the luxury of a centre. All volunteers operate out of private homes under a government permit. We have varying numbers of flying foxes in care at any one time (currently, we have 38) but by far our busiest season is through the summer months, as this is when fruit ripens, and there are many people who still use dangerous netting to prevent birds, bats and possums from feeding on their backyard crops.

Summer is also orphan season and the



Denise Wade.

bulk of our orphans are rescued between October and March. As there are many trees flowering during the summer months, we also rescue many hundreds of bats caught on barbed wire fences as they come into feed on flowering or fruiting shrubs and trees planted against wire fences.

Flying foxes also fall victim to electrocution by flying into power lines, collisions with cars, dog and cat attacks. There is the risk of starvation too and heat events that are killing many thousands of flying foxes with increasing regularity.

Q: Will you tell me about one of your great successes please?

A: There have been many, but one that has always stuck in my mind involved a flying fox that we called Marty. He was an adult black male who had sustained a concussion, probably incurred as the result of the fact that it was the mating season and the boys can get a bit boisterous! Marty was found hanging low in a shrub one morning.

Unfortunately, some horrible humans had found him before he was spotted and rescued by a local property owner. Dazed and unable to escape, they had beaten Marty with a wooden stake. The attack was interrupted in the nick of time and I was called to help Marty. An on-site assessment revealed no broken bones but Marty did have a very sore and bruised back that I presume was where the bulk of the blows had landed.

The only reason Marty had survived such

a merciless attack was that the bushes were quite thick and those bashing him couldn't get a solid swing at his body. Warmth, fluids, pain relief, bed rest and TLC saw a whole new Marty emerge during the ensuing weeks and he was sent to a flight cage to build up his strength. Following his time recovering in our care, Marty was successfully released back to the wild and it bought a tear to my eye to see him fly off, healthy again and free to continue living his life.



Above: Bats of all types can become caught up in nets, but flying foxes are more vulnerable because of their desire to reach fruit.

Q: Your Batzilla page on Facebook has some heart-warming videos of injured bats being fed: for example, the clip of Layla eating sweetcorn and that of Thomas enjoying banana custard...but what is the normal food you give your bats? Do they need a special formula to help them recover more rapidly or do the younger bats require a different mixture from the adult bats?

A: We feed our orphans calibrated and regular feeds of fortified cow or goat milk. By the time they reach the seven week mark, we begin the weaning process by introducing small pieces of steamed apple known as 'bat lollies'! We gradually increase the size of the fruit and finally present it uncooked, with the skin on.

Our orphans are fully weaned off milk by 11 weeks, and they are then fed chopped fruit with a high protein supplement added. We provide as much native blossom

Did you know?

Flying foxes are the largest bats in the world, with a range extending throughout much of the Pacific, ranging from East Africa across to Australia. Unfortunately, heavy hunting as a source of food and clearance of woodland areas where they roost has seen many species decline in numbers, and some have become extinct in the recent past. These bats are also persecuted because they will attack fruit-growing plantations. At least 60 species still survive though. They have become known as flying foxes because of the fox-like appearance of their faces.



An idea of the wingspan of a flying fox can be seen in this photo, taken on the Indonesian island of Bali. The largest on record measured 1.5m (4ft 11in).

Below: An injured black flying fox being nursed back to health. They generally prove to be co-operative patients!



“ Our orphans are fully weaned off milk by 11 weeks, and they are then fed chopped fruit with a high protein supplement added ”

and browse (vegetation) as we can, to teach our orphans about their future life in the trees. We generally feed apples, pears, bananas, watermelon, rockmelon (netted melon), paw paw, grapes and mangoes. Our flying foxes also receive diluted juice, bat smoothies, water and mineral licks.

Q : Do different bats have noticeably different personalities?

A : Yes, most definitely, and every bat has a distinct personality. Some are outgoing, others are shy, most are inquisitive and all are extremely intelligent. Generally speaking, large adult male blacks and greys are absolute delightful and co-operative, and it is the older black females who can be a little more difficult to handle. Little reds are shy, intuitive bats that must be kept in care with members of their own species. Juvenile flying foxes are extremely entertaining to watch as they learn to climb, fly and explore in preparation for their return to the wild.

Q : You also provide toys for recovering bats?

A : Since flying foxes are so intelligent and get bored very quickly, we must be inventive and not only change the browse and blossom often, but we also frequently rotate the toys and other items of enrichment that we provide frequently. Flying foxes love anything with a bell attached to it and I have watched them untie knots and even remove batteries from sealed battery cases!

They love a challenge and this presents us with challenges of our own as we attempt to keep them engaged, interested and busy. So, for example, we peg grapes



Above: Little red flying foxes are highly social by nature, and need to be kept in groups to assist their recovery. This is the smallest of Australia's four species of flying fox. PHOTO COURTESY MDK572.

Below: These bats all have very different and distinct personalities, based on Denise's experiences working with them.

to plastic chains and the bats must pull up the chain to get their reward. We present all manner of fruit in different and interesting ways and we always have fresh browse in their quarters as they particularly love to play in tree branches.

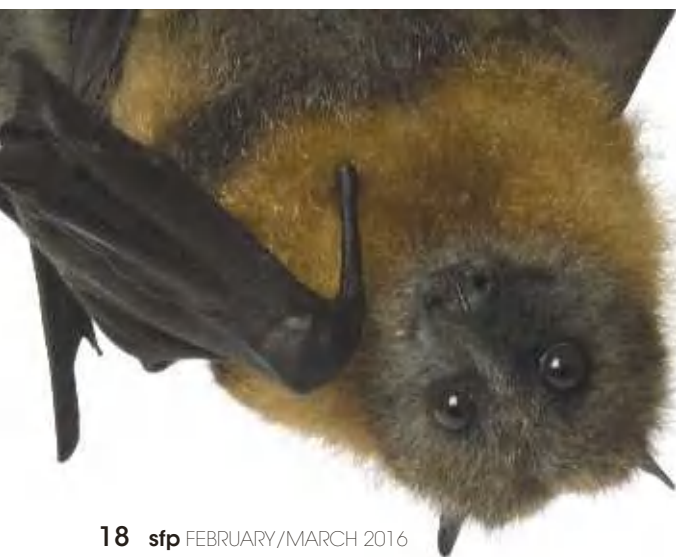
Q : Sadly, some bat species and humans share diseases - rabies or bat lyssavirus is the obvious one; are there special precautions that you have to take to keep humans (and bats) healthy?

A : The only dangerous zoonotic disease transmitted from bats to humans in Australia at this point is Australian bat lyssavirus, which is a form of rabies. Flying foxes have been implicated in the transmission of Hendra virus to horses but despite intensive scientific research, no transmission link has yet been established. No bat carer has contracted a Hendra infection from bats, and in all of the human cases that have occurred, Hendra has been

contracted from sick horses. As Australian bat lyssavirus is so closely related to classic rabies, all bat carers must be vaccinated against rabies and have written proof of current titre levels that need to be maintained above a certain value, so as to ensure they should be protected.

As rescuers on the front line, we are well trained and we use personal protective equipment (referred to as PPE), gloves and thick towels whenever we rescue bats. As with any animal that is frightened and in pain, bats may bite but only out of fear and never malice. It is not usually difficult to gauge a flying fox's intentions and if there is any question, then extreme care is exercised, but most of the time they settle quickly and are won over with soft fruit, diluted blackcurrant juice and quiet conversation!

Q : How long does it typically take an injured bat to recover and do you think they become tamer or less fearful of humans as a response to their treatment?



A : The time that a bat has to spend in care is entirely dependent upon the injuries that it has sustained. We keep most flying foxes in care for a minimum of three weeks as constriction injuries like those sustained on barbed wire or in netting can take some time to appear. A bat that can't fly will not survive and we must be certain that no injury will manifest itself after the bat has been released. In fact, we 'test fly' all rehabilitated bats before release, so we know that they are able to fly the distances necessary to survive.

Flying foxes are extremely intelligent and they do seem to understand that we are trying to help them. As a result, they are normally quite happy to let us do what needs to be done when in intensive care and providing them with bed rest. Once they are well enough to graduate to the outside flight aviary, it becomes an entirely different matter and they quickly revert back to being a wild animal.

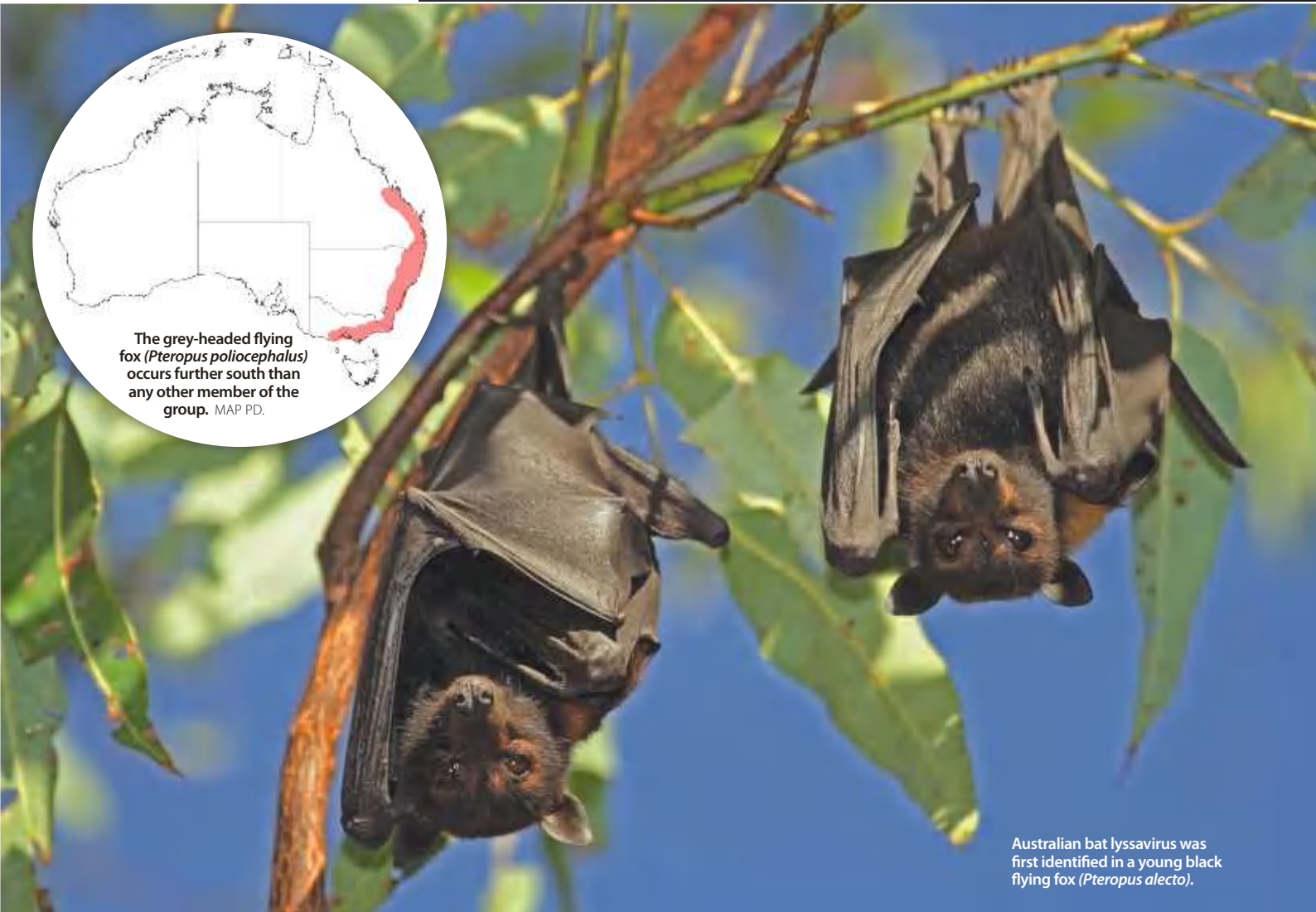
We also raise orphaned flying foxes and we must replicate as closely as possible the way they would be raised in the wild. Bat mothers are very tactile and loving, and we must do the same with our orphans or they will suffer. All our orphans participate in a



Flying foxes are highly intelligent mammals, and must be kept occupied with toys while being nursed back to health, so as to prevent them from being bored.



The grey-headed flying fox (*Pteropus poliocephalus*) occurs further south than any other member of the group. MAP PD.



Australian bat lyssavirus was first identified in a young black flying fox (*Pteropus alecto*).

1



2



3



1: It is vital that an injured flying fox is able to fly again as normal, before being released. **2:** Flying foxes use their feet to support themselves. **3:** Flying foxes in general are very important of pollinators through their range.

crèche and release programme that ensures they have no fondness for humans and are equipped to deal with life in the wild. They are also soft released after a time in crèche and this means that they are released into a colony and support fed until they are fully integrated into the colony.

Q : If you could spread a single message to the world about bats, what would it be?

A : If we don't actively protect all bat species, we run the very real risk of losing them. Flying foxes are Australia's only nocturnal pollinators and seed dispersers of native forests. Their smaller relatives - microbats - consume millions of disease-carrying mosquitoes and other pest species every evening and even so, over three million people die of mosquito-borne illnesses (such as malaria) every year. If bat numbers plummeted, this total would be even higher.

Please don't fear bats, for they are essential to the health of the planet. We encourage people to become educated to

the plight and value of bats, to understand the extremely small risk of disease transmission between bats and humans and to preserve essential habitat for them. Bats.....protect them or lose them!

Q : If anyone wants to send donations or otherwise support bat rehabilitation, how can they do so?

A : I volunteer with Bat Conservation & Rescue Qld Inc., which is a fully self-funded volunteer organisation that receives no government funding. Donations details can be found on the website at www.bats.org.au

Our volunteers respond to over 2200 calls for bats in distress each year, with the number of calls for assistance growing annually, and we sincerely appreciate all support. ■

* Denise Wade is the administrator of the Batzilla the Bat community page on Facebook: <https://www.facebook.com/pages/Batzilla-the-Bat/44579649553687>

Above: The Australian range of the spectacled flying fox (*Pteropus conspicillatus*) is restricted to Queensland, but it ranges further north to Papua New Guinea. PHOTO COURTESY CSIRO.

Bat Conservation & Rescue Qld Inc.

The organization was officially launched in February, 2007 by Louise Saunders. She had been a bat carer and advocate for many years. Today, BCRQ has almost 160 members with around 60 active members servicing a 300 sq km (115 sq ml) area, with the rescue load increasing annually. Their website <http://www.bats.org.au/> gives information on their work and how you can support their activities.

Further information

Some of BCRQ's activities are reported here: <http://www.news-mail.com.au/news/Bat-Conservation-and-Rescue-Queensland-defends-cri/1943724/>

Books on bats include:

- **Bats** by Phil Richardson, published by The Natural History Museum, 2011 (ISBN: 978-0565092757) and
- **Bats - Biology and Behaviour** by John Altringham, published by Oxford University Press, 1998 (ISBN: 978-0198503224). This book provides a much more detailed account of the world's bats and their biology.



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We all know that burrowing plays a key part in the lifestyles of many rabbits and rodents. **James Brereton MSc** reveals the range of different reasons for this behaviour, and how this can impact on the way in which we look after our pets.

In the wild, constructing burrows brings many advantages for rabbits and rodents – from the development of warm hiding places away from extreme weather conditions to the creation of safe places for rearing offspring. Burrowing has become such an important component of their lifestyles that many rodents will still attempt to build burrows even when kept as pets, where food, shelter and warmth are constantly available.

For some species, the provision of suitable burrowing substrates can help them to express their natural behaviours. For others, the provision of 'fake burrows', in the guise of warm, quiet places for resting, can help to alleviate the need to burrow, allowing them to be more settled in their surroundings. This article will explore burrowing behaviours in small furry pets and how we can best help our rabbits and rodents with their burrowing needs.



Above: Black-tailed prairie dogs (*Cynomys ludovicianus*).

Heading underground

The burrow itself

In the wild, their burrows may vary widely, from small depressions in the ground to the complex, carefully constructed, well-ventilated burrows of prairie dogs (*Cynomys* spp.). Burrows can have multiple exit routes, and in some species, these exits are built on high ground to protect against flooding. Burrows can be used as wintertime accommodation for species in colder climates, as the temperature below the ground will be considerably warmer and more stable than at the surface, allowing individuals to survive here. Ventilation is a key consideration though, as animals in burrows could run out of oxygen. For this reason, ventilation holes are often incorporated into the design of large rodent burrows.

Burrows may contain food stores: for some species, huge caches of food are put away in advance for winter. Burrows often contain large amounts of bedding too. Just as with our pets, rodents will collect dried grasses from their environment in order to make their sleeping quarters warmer, and may also incorporate their fur as a lining material for their bed.

In some cases, burrows can develop further into an underground ecosystem, providing homes for more species than just rodents. In the American prairies, for example, abandoned burrows can also provide homes for burrowing owls (*Athene cunicularia*) and rattlesnakes (*Crotalus horridus*). Such burrows can also

be home to the critically endangered black-footed ferret (*Mustela nigripes*). Other species, such as tarantulas and toads, may seek shelter in abandoned tunnels of this type as well. Burrows created by rodents and rabbits are therefore potentially important structures for biodiversity in various parts of the world.

Burrowing behaviour

This type of behaviour is still seen in the domesticated rabbit (*Oryctolagus cuniculus*) and a range of rodents kept as pets. These include species from across the globe, as shown in this table (below right).

In the wild, burrowing can bring plenty of advantages for rodents. For some species such as hamsters, burrows act as safe places to hide food stores. Many species give birth underground, affording their offspring extra protection during the most vulnerable period in their lives, particularly in the case of rodents like mice and rats whose offspring are helpless at birth.

Many rodent species, such as the degu, like to live in large communal burrows (Ebensperger & Bozinovic, 2000). Communal living of this type helps to keep the colony warm, while also presenting extra paws for renovations within the burrows. Researchers investigating wild degus noticed that larger colonies are more efficient at digging: each individual degu shifted more substrate per day compared with



A view inside the burrow of a naked mole rat (*Heterocephalus glaber*) – a rare example of a rodent that spends its entire life underground.



Studies have shown that wild degus work more efficiently together in groups in the wild.



those which were living on their own – perhaps because they were more motivated?

When they are being kept as pets, the need for rodents to burrow is largely unnecessary. Indoor temperatures are adequate to keep them warm, and there are normally no predators to hide from, provided that dogs and especially cats are excluded from the area of the home

where they are housed. Nevertheless, for many species, digging and burrowing has become such an important part of daily life that behaviour of this type is instinctive. Despite often being unnecessary for our pets therefore, many species still want to try building and maintaining their own burrows.

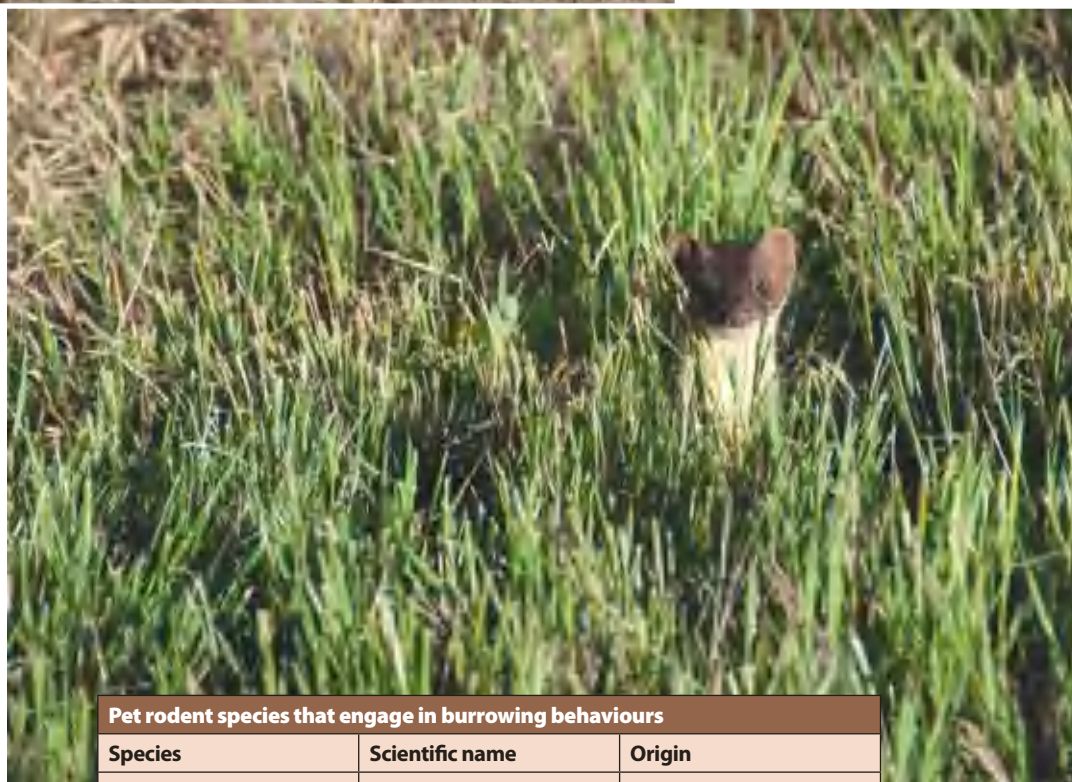
A classic example is the Mongolian gerbil or jird as it is also known. These rodents are well known to pet keepers for their enthusiastic digging efforts in the corners of their cages. In some cases, digging efforts may take up most of the jird's time, and often prove seemingly pointless. This is known as a stereotypic behaviour – a repetitive behaviour that has little benefit for the animal itself: see Wiedenmayer's (1997) paper for more information.

Studies have shown that gerbils do not stop their digging efforts even when their enclosure size is massively increased. Furthermore, changing the substrate type to natural sandy soil did not affect the amount of time that they spent digging either. Instead, research suggests that providing quiet, dark places for gerbils to hide will reduce the frequency of digging. Locations of this type are perceived as safe by the gerbils, allowing them to feel they are hidden away from predators, which is basically what they aim to achieve by burrowing.

Mongolian gerbils inhabit open countryside where there is naturally very little in the way of ground cover. If exposed here, particularly during the hours of daylight, these rodents are very vulnerable to predators, including birds of prey flying overhead. Digging is something that has become hard-wired into them as a survival instinct.

Burrowing as enrichment

Creating burrows is a natural behaviour for many rodents, and it can help to dispel some of the high energy levels seen in pets. Burrowing, then, may be regarded as a form of enrichment in their



Above: The now very rare black-footed ferret may invade the burrows of prairie dogs, hunting them in their underground world, as well as living underground itself.

Pet rodent species that engage in burrowing behaviours

Species	Scientific name	Origin
Degu	<i>Octodon degus</i>	Chile, Peru
Golden hamster	<i>Mesocricetus auratus</i>	Syria
Mongolian gerbil (jird)	<i>Meriones unguiculatus</i>	Mongolia
Chinchilla	<i>Chinchilla chinchilla</i>	Chile, Peru
Mouse	<i>Mus musculus</i>	Europe
Brown rat	<i>Rattus norvegicus</i>	Europe
Steppe lemming	<i>Lagurus lagurus</i>	Mongolia, China, Russia

“ many pet rodents instinctively know how to get started when digging a burrow, if they are given the opportunity ”

lives, similar to providing the wooden chew toys available at most pet shops that should be offered to keep pets interested and occupied in their surroundings.

With regards to burrowing itself, many pet rodents instinctively know how to get started when digging a burrow, if they are given the opportunity. Some substrates shift shape when excavated, but fail to give the form or rigidity necessary for burrowing. On the other hand, other types of substrate may be more suitable for creating burrows, but offer less warmth and insulation for your pets. It is therefore important to ensure that a suitable type of substrate is chosen, if it is to be used for burrowing.

Substrates for rodents

There are many different substrates available that you can offer to pet rodents and rabbits, ranging from paper tissue to various forms of sand. Given

DID YOU KNOW?

Burrowing rodents may eat fungi and then spread the spores in the soil through their droppings, helping their dispersal. This can be particularly valuable in a forested setting.

Below: It is easy to set up alternatives to burrows in your pet's quarters, which still offer seclusion, as shown here with these guinea pigs.

Above: An artificial burrow constructed for a Mongolian gerbil.

their instinct for burrowing, so many rodent species will try to burrow into a wide range of substrates. But do we know which they prefer? Deacon (2009) conducted tests to investigate which substrates were most attractive to pet rodents for burrowing purposes. Most of the species tested were enthusiastic about burrowing into earth-like substances such as sand or soil. The fancy mouse, though, was the only species that showed an interest in burrowing through piles of food pellets.

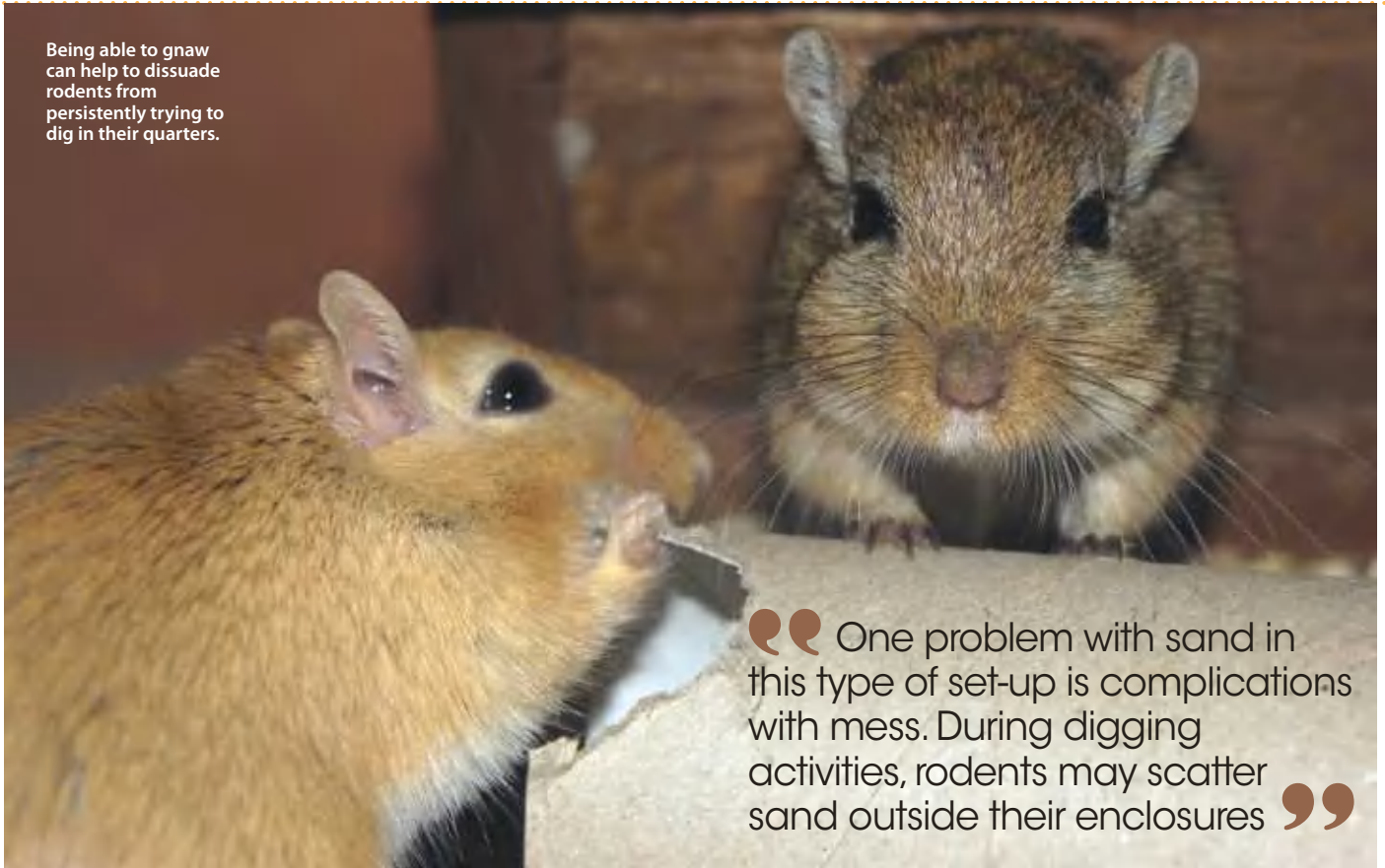
According to Sherwin *et al* (2004), burrowing behaviour is highly motivated

in the mouse. In preference tests, mice worked hard to gain access to burrowing substrates. Fortunately, many substrates available to us, as pet keepers, can help us to keep our mice digging.

Wood shavings are absorbent, and therefore can serve to reduce the odour associated with some rodents such as mice. A thick layer of wood shavings can also be used for burrowing, thus allowing pet rodents to express their digging needs. Wood shavings do not mimic natural substrates, such as earth, but products of this type are hygienic, relatively inexpensive and definitely easy to replace. There can be a drawback if



Being able to gnaw can help to dissuade rodents from persistently trying to dig in their quarters.



“ One problem with sand in this type of set-up is complications with mess. During digging activities, rodents may scatter sand outside their enclosures ”

they are dusty though, as this can lead to respiratory problems.

Various types of sand are also available as substrates for rodent enclosures. These are similar to natural burrowing substrates such as soil, but lack the rigidity to permit the construction of proper rodent burrows. Nevertheless, many rodents begin burrowing immediately after encountering sand on the floor of their enclosure.

One problem with sand in this type of set-up is complications with mess. During digging activities, rodents may scatter sand outside their enclosures, and potentially on to carpets below. Keeping your rodent enclosures away from mats and carpets may make it easier to clean up as necessary. Another potential

problem with sand is warmth. Sands, as a general rule, are not warm and have poor insulation, so they cannot be used to construct a nest.

Paper-based substances may also be used as substrates for rodent enclosures. These can be useful in some circumstances, allowing rodents to build up their nests. However, paper-based substances are often more difficult to burrow or dig into. Rodents will often still attempt to burrow through paper, but this proves quite hard. Smaller species find it more straightforward though, often creating a snug bed in these surroundings.

Some larger species of

Below: Soil is ideal for burrowing, being relatively soft yet compact. Here a European hamster (*Cricetus cricetus*) looks out from its burrow in a field.

rodent, such as the guinea pig (*Cavia porcellus*), and rabbits may be kept outdoors in a run. For rabbits and guinea pigs, grass is an excellent food source, so giving these animals access to lawns will allow them to graze throughout the day. Soil is arguably the best substrate for creating burrows, as it is in nature.

Beware though, as some rabbits when housed outdoors will dig deep into the soil and may even escape from their run if there are not secure foundations beneath. Rabbits are rapid diggers, so take precautions to stop your pet escaping under these circumstances. If the set-up is secure though, access to grass and soil can be very enriching for pet rabbits, and is to be encouraged where possible if your animals can be kept safe. Bear in mind, however, that burrows may become wet following a period of heavy rain, and rabbits can become chilled under these conditions.

Some domestic breeds, such as rexes, have much thinner coats than their wild cousins, and rabbits are not native to the cold, damp northern European climate, originating from the Mediterranean. It is better to have a snug sleeping quarters raised off the ground, where your pets



Always provide suitable retreats for guinea pigs outdoors. They need shelter here to feel secure.



“ Many rabbits, shortly before giving birth, will have strong impulses to try and dig burrows. ”

can be encouraged to retreat instead, when the weather is bad.

Burrowing for safety

Many rodent and rabbit species dig burrows as a way of hiding from predators. While there are no predators (hopefully) in our homes, rodents that do not feel safe in their environments may be instinctively tempted to try burrowing.

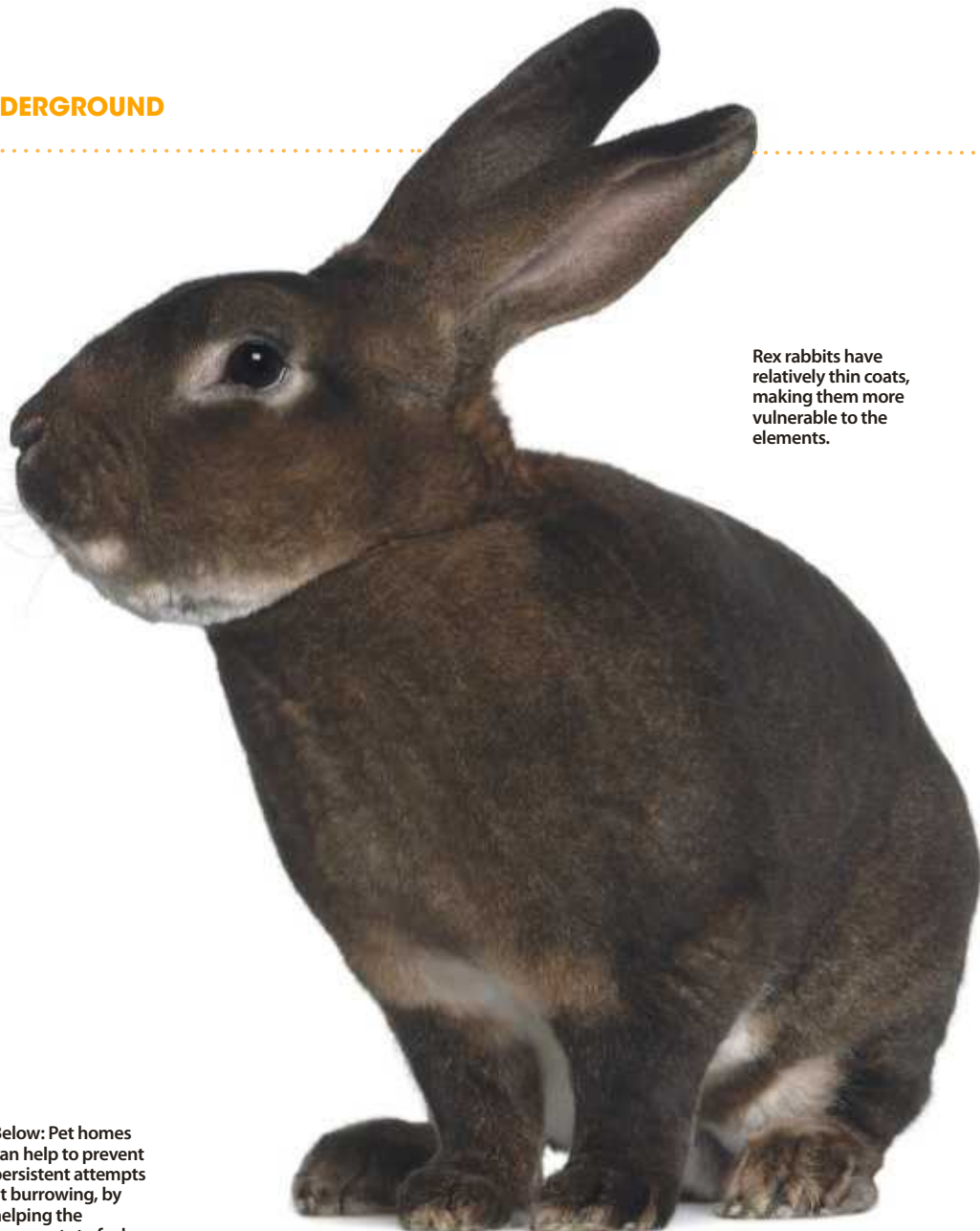
Production of warm, safe areas for your pet can help to lessen excessive levels of digging and burrowing behaviour in such cases. Small boxes or houses that can be purchased at pet shops should be offered as suitable retreats. This gives your rodent an option to hide away whenever it feels threatened or simply wants to hide or sleep.

Many rabbits, shortly before giving birth, will have strong impulses to try and dig burrows. If kept outdoors, an extensive network of burrows may be created as a result. Should the babies be born in these burrows, it is likely to be very difficult to know what is happening in these surroundings.

If your rabbit cannot dig a burrow, make sure you provide the doe with a suitable environment where she can keep warm and out of sight within her

Below: Pet homes can help to prevent persistent attempts at burrowing, by helping the occupants to feel secure.

Rex rabbits have relatively thin coats, making them more vulnerable to the elements.



enclosure. Try not to disturb her more than strictly necessary though, because after giving birth, she might abandon her young if she does not feel secure in her surroundings.

Burrowing for offspring

For many rodents and rabbits, their offspring are born blind and helpless. Out in the open, these animals stand little chance of survival. This is one reason why does become strongly motivated to dig burrows at specific times in their lives: there is a need to create a den for their kits.

Rodents may also be protective of their babies – try not to handle young animals while they are still under the care of their mother. She will naturally want to conceal her babies, so a choice of hiding places will also be important during the birthing and rearing process. In the case of guinea pigs, which give birth to fully formed, active youngsters, so there is less need for burrows, as their offspring will move around almost immediately, rather than having to stay in one location.

DID YOU KNOW?

The huge prairie dog 'towns', extending over an area of as much as 65,000 sq km (25,000 sq ml) and home to a population of 400 million individuals, can help to improve grazing here for large animals such as bison. These rodent colonies therefore play a major role in the overall ecosystem where they occur.

A watchful prairie dog – millions may live together in large underground colonies.



Housing alternatives

Providing a warm, dark, safe area for your rodent to rest can help with stereotypical digging behaviour, which can otherwise take over its life. It is worth remembering that some rodents feel reassured by small spaces, replicating the sense of close confinement that exists in a burrow. Fortunately, there are a range of different housing methods that are available to pet keepers for helping rodents – and rabbits – to feel secure in their enclosures. Something as simple as a cardboard box may serve to give your pet a sense of security in its surroundings, while also providing a material for gnawing on.

Conclusion

Burrowing is an important part of the behavioural repertoire of many rodent species. This is something that we may need to help our pet rodents to express adequately though, within the confines of the home. A wide range of different substrates can be provided to rodents for burrowing purposes, many of which are available in pet shops.

Some rodent species burrow primarily as a way of seeking hiding places. For these animals, the introduction of warm, quiet resting zones in their quarters may help to reduce their desire to dig. This can otherwise become overwhelming,



Above: A way of creating an artificial 'burrow' for rabbits above ground, using twigs and hay.

Below: A snug nest helps to protect young rodents that have no fur and cannot regulate their body temperature effectively – such as these new-born fancy mice – from developing hypothermia.

It's not just about burrowing – don't forget that some rodents such as rats like to climb as well, and a multi-level cage can be recommended, with retreats on the different levels.



particularly when pets are first moved to new surroundings and are seeking a sense of security. As always, understanding the specific needs of your particular pet will help your small furry animals to live long, healthy, fulfilled lives. ■

Further information

- Bocek, B. (1986). Rodent ecology and burrowing behavior: predicted effects on archaeological site formation. *American Antiquity*, 589-603.
- Deacon, R. M. J. (2009). Burrowing: a sensitive behavioural assay, tested in five species of laboratory rodents. *Behavioural brain research*, 200(1), 128-133.
- Ebensperger, L. A., & Bozinovic, F. (2000). Communal burrowing in the hystricognath rodent, *Octodon degus*: a benefit of sociality?. *Behavioral Ecology and Sociobiology*, 47(5), 365-369.
- Goyal, S. P., & Ghosh, P. K. (1993). Burrow structure of two gerbil species of Thar desert, India. *Acta Theriologica*, 38, 453-453.
- Sheets, R. G., Linder, R. L., & Dahlgren, R. B. (1971). Burrow systems of prairie dogs in South Dakota. *Journal of Mammalogy*, 451-453.
- Sherwin, C. M., Haug, E., Terkelsen, N., & Vadgama, M. (2004). Studies on the motivation for burrowing by laboratory mice. *Applied Animal Behaviour Science*, 88(3), 343-358.
- Wiedenmayer, C. (1997). Causation of the ontogenetic development of stereotypic digging in gerbils. *Animal Behaviour*, 53(3), 461-470.
- Yarto-Jaramillo, E. (2015). Chapter 42: Rodentia. *Zoo & Wild Animal Medicine*, vol. 8. Elsevier Inc., Missouri.





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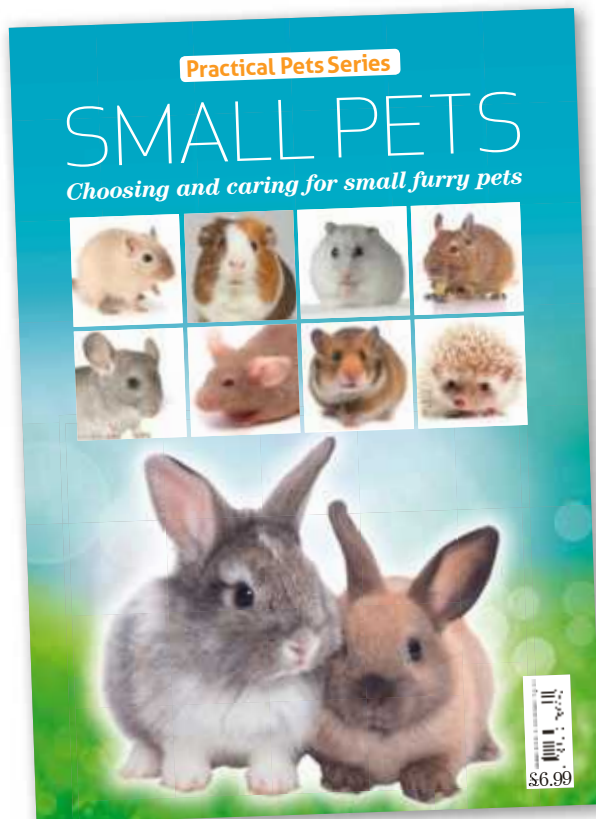
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Acacia tree rat (*Thallomys paedulcus*)

These rodents are very closely associated with acacia trees, living under the bark and in hollows amongst the branches. Their range extends across much of eastern Africa south of the Sahara, from southern areas of Ethiopia right down to South Africa. The advantage of living in these particular trees is that the rats are well-protected against would-be predators by the fierce thorns of these plants. This species can be distinguished easily from its close relative, the black-tailed tree rat, by its brown tail. The tail itself is often longer than the body, with the total length of the acacia tree rat being 37cm (15in).

These rats are very agile, spending most of their time off the ground, but they will also burrow along the roots of the acacia trees. The chambers that they create here are used as retreats if a brush fire breaks out, burning back the branches on a tree until it sprouts again. Acacia tree rats may built their nests as high as 4m (13ft) off the ground. Breeding occurs during the rainy season, with between 2-5 pups being born at a time. The youngsters will be weaned at approximately a month old, and will be mature by 107 days. They can live for three years.



ARCHAEOLOGIST

Sarah Schwarz is an archaeologist from the University of Southampton. She is also 'mum' to six guinea pigs. She volunteers at her local guinea pig rescue centre, and is always trying to resist the urge to adopt more homeless guinea pigs, for fear of running out of space at home! Sarah talks to **Susie Kearley** about her passion for guinea pigs.

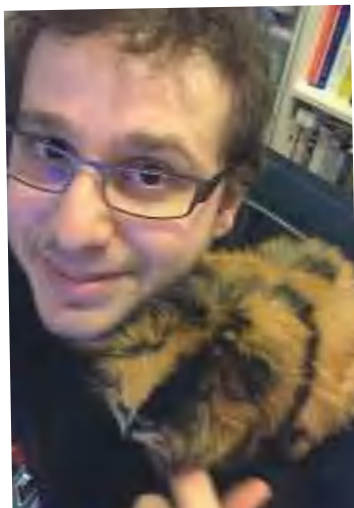
"I've got six female guinea pigs myself, living in two groups," says Sarah, "Three came from a pet shop, as babies - I didn't know any better at the time. The other three were rescues from a friend of a friend. My husband, Ben, had no say on the matter. He just came home to find they were here!"

Sarah has chosen a diverse variety of names for her pets, reflecting her wide-ranging interests. "The three from the pet shop are called Holly, Twiggy and Blossom. Twiggy was named after a hominid (ancient human) skeleton that they found in Olduvai Gorge in Tanzania. It was one of my favourite archaeological finds, even though I wasn't personally involved in that dig. The skeleton itself was obviously named after the famous model. They're bright little characters!"

"The three rescue guinea pigs are Mojo, Edith and Agnes, named after the three orphan girls from the film *Despicable Me*. They had just been ignored by the children who had kept them, so I believe. These guinea pigs were left in the garage and had become ill. The children never played with them, and they were receiving no vegetables."



ALL GUINEA PHOTOGRAPHS COURTESY OF SARAH SCHWARTZ. ARCHAEOLOGICAL PHOTOS COURTESY THE AUTHOR.



Twiggy.

Differing care requirements

"When these guinea pigs came to me, they all had digestive problems, but I took good care of them, and they've recovered reasonably well, so now they're much healthier.

"Edith is funny because she snores really loudly! Agnes is very timid. She thinks the world of Ben, but in spite of all my efforts, she doesn't like me!"

So where do they live now they are with Sarah? "They are all kept indoors, in two C&C cages (cubes and coroplast), which are flexible, two-storey cages with lots of space for exercise. It's an upstairs-downstairs, grid-based structure.

"The rescue guinea pigs are on absorbent materials because they still have some stomach issues and can be prone to bouts of diarrhoea, which makes a real mess of fleece blankets. They don't want to eat hay, which probably doesn't help, but they will devour a huge amount of food and seem to have very large appetites for

Edith, Margo, Agnes.



Twiggy.



Below: Holly and Twiggy.



little guinea pigs! My other guinea pigs are kept on fleece."

A bad experience

Sarah had rather an unhappy start when she began keeping guinea pigs, but that did not put her off. "One of the guinea pigs from the pet shop turned out to be pregnant and she was due to give birth on my wedding day, which was a bit nerve-racking. Fortunately, she gave birth a few days early, so it didn't affect the wedding.

"But sadly, the young guinea pig was stillborn and we think the mum had been impregnated by her brother. After giving birth, mum seemed happy enough and didn't seem to be aware of what had just happened.

"Their favourite foods are kale and spinach. Molly likes having a bath and being shampooed. She's a proper princess. She drags all her blankets onto one spot and sits on top of the pile.

"Edith has a terrible haircut at the moment, caused by some rough play with her cagemates. She looks like she's been shaved down one side, and Twiggy likes to destroy everything. They're such adorable characters. Twiggy has an obsession with toast and gluten things - she's never had any, but she can smell it, and keeps begging. She starts whooping when I put bread in the toaster, and then she climbs up in her cage and wants to eat my toast!"

Working with rescue guinea pigs

So how did Sarah go from keeping her own guinea pigs to recently getting involved in rescue work? "The rescue centre where I work is called Wheek and Squeek. It's in Bishop's Waltham, a little town in Hampshire. I've been volunteering, two days a week for three months. I started because the lady who runs it, Anna Blake, needed extra help. They have rabbits too, and do holiday boarding as a way of helping to fund the rescue centre.

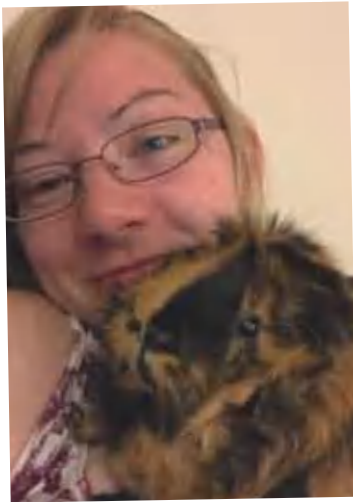
"They have lots of guinea pigs looking for homes, and also have some guinea pigs who are either too old or too ill, to go to a new home. There are currently about 150 guinea pigs waiting for homes and we do need more people to take the guinea pigs, so if anyone's interested in adopting one, Anna would be very interested to hear from them!

"There are three sheds in her back garden, full of guinea pigs, as well as a network of fosterers who help out as well. In practice though, it seems that many of the fosterers actually end up adopting their guinea pigs in the end.

"Anna also carries out grooming and will care for people's guinea pigs when they're ill if they need help. She also has a vet who does talks to raise awareness of the issues around guinea pig care. The work has taken over her house, kitchen and garden.

The difficulties of rescue work

What is the biggest challenge for Wheek and Squeek? Sarah explains that it often simply stems from the sheer number of



Above: Sarah and Twiggy.

guinea pigs that they have to deal with – sometimes this can soar dramatically. “So-called ‘hoarders’ are a problem,” she explains. “When we take guinea pigs in from a hoarder, we might get 100 coming in at once. It’s very hard to find space for them all, alongside those that we already have.

“People think they’re safe and okay in the rescue – and they are – but we do have capacity limits and that’s a real challenge. People still need to adopt them, so that when the next group of unwanted guinea pigs need our help, we have space to take them in.

“Sometimes, the people giving them up can be rude and aggressive too, and Anna shouldn’t have to deal with that. The most common reason for people handing their pets to us is that the kids have got bored of them or the family don’t have the time to look after them.”

Nevertheless, Sarah is keen to emphasise that it is not possible to generalise, and some cases are sad, being outside the owner’s control. “There was one memorable incident, where a guy was allergic to his guinea pigs and was struggling. He’d looked after them really well and left them in our boarding facility while he went on holiday. This guy was suffering with allergies when he left,



One of Kate's marked hedgehogs being weighed. PHOTO COURTESY KATE LONG.

Above: Edith.

but had completely recovered when he got back, so he left his guinea pigs with us for rehoming, because obviously having them wasn’t really an option for him.”

Sarah’s archaeology and animals

“I’m a PhD student so I teach at the University of Southampton and do research, working towards a doctorate. I’m more lab-based and don’t do a lot of digs, but people do find animals in archaeology, although they’re usually larger animals that were used in farming, rather than small furry pets!

“My study normally focuses on Neanderthals, who definitely didn’t have any sort of pets. In fact, the domestication of canids (the first animal to be domesticated) didn’t occur until modern humans or *Homo sapiens* arrived.

“That was around 40,000 years ago, and the dogs would have been working animals. When people started breeding horses, or even cats, they would have been working animals too, unless they were bred for food.

“When you study farming in the Neolithic period, you see the bone structures of animals change as they become domesticated. Docile animals were specially bred for agricultural work and for food.

“In archaeological digs, people are more likely to find the remains of cattle than small animals, and it is normally butchered bits, which people had eaten and then thrown on rubbish tips.

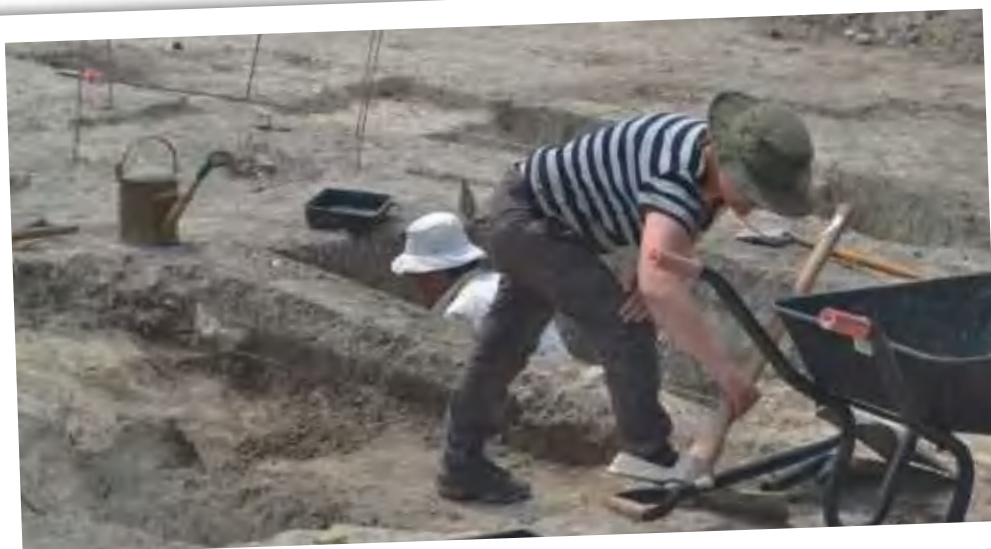
“The first depiction of a guinea pig in Britain was in an Elizabethan portrait of three children, with one holding a guinea pig. It was a wealthy family with an exotic pet. It’s easy to forget that pets were a luxury until very recently, so for the majority of human history there were no pets.

“I do look at burial practices in my archaeological work, and these sometimes include animal remains. Again, they’re usually as food, but you sometimes see people being buried with their favourite dog or horse!”

About Wheek and Squeek

So can Sarah give us more information about Wheek and Squeak, and the services that are offered? “We are very passionate about guinea pigs and their welfare, and try to educate people as to their correct care,” she says. “During the year, we run afternoon or evening courses called an ‘Introduction to Guinea Pigs’ and ‘How to Bath and Trim your Guinea Pig’. You can also read about the correct care of a guinea pig, what to feed, health checks, how to clean hutches and what to buy when preparing for your new guinea pigs, plus loads more information in our online information.

Basic assistance with care is also provided. “We are aware that many people cannot trim their guinea pigs’ nails, so we do free nail trimming for any guinea pig. All you need to do is contact us and arrange a time to pop over. I have seen some horrendously long nails on some guinea pigs and cannot imagine how uncomfortable it must be for them,” adds Sarah.





"Also, you can book your guinea pig in just for a bath. This can be simply for a general bath and to remove the grease from the grease gland area, or it can be to treat some skin problems, such as lice or fungal infections. If you are uncertain as to what type of bath is required, we are happy to advise."

Boarding and shopping

"The rescue also boards guinea pigs and rabbits, and all funds raised go to supporting the cost of running the rescue. The hutches range from 1.2x0.6m (4x2ft) for two guinea pigs, up to 1.8x0.6m (6x2ft) for either rabbits or large groups of guinea pigs with indoor or outdoor accommodation.

"We also have safe, secure exercise runs with lots of tubes and other interesting items for them to explore, weather permitting. Our boarding rates are very competitive and include vegetables, hay, Megazorb bedding, readigrass, nail trim and 24 hour supervision on our premises. We

are happy to cater for any special diets and you can even book them in for a bath using luxurious Gorgeous Guineas shampoos while you are away so they go home smelling beautiful!" adds Sarah.

"There is also a shop at the rescue where you can buy a whole host of things for your guinea pigs. We supply hay, megazorb, readigrass, timothy hay, natural treats, Wagg Guinea Pig Crunch, Wagg Optimum and Excel (with other food available on request). You can also choose from shampoos, a selection of little houses, wooden arches, tubes, water bottles, a large selection of dishes, carry cases, willow and seagrass toys, not to mention paper bags, hutch cleaning sprays and much more!"

Helping with compatibility issues

One of the hardest things for owners can be to find a compatible companion for a pet guinea pig, but here too, Wheek and Squeak can assist. "Guinea pigs are a friendly

Above, left to right: Holly, Margo, Twigg.

bunch and hate to live alone. They can become very lonely and sometimes pine and go off their food. We do always try to help with finding your guinea pig a new friend," says Sarah.

"This can mean pairing up males with other males, or a female with another female. It has been said you cannot pair males together, especially when they are mature. This just isn't the case though.

"In fact, we have been successfully pairing up male piggies since 1998 and have a wealth of experience in guinea pig compatibility and body language which provides an invaluable guide as to whether things will work out between individuals or not!" ■

Contact point

* See www.wheekandsqueak.webs.com for further information and contact details.



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NEW RABBIT ANCESTOR CONNECTS EUROPE AND ASIA

The recent finding of a new species of ancestral rabbit has also proved to be of significance, in terms of our understanding of the changing geography of Europe and Asia.

A forerunner of the rabbit which lived in the area of present-day Siberia during the Miocene, about 14 million years ago, has recently been unearthed. Now known to science as *Amphilagus tomidai*, this find has helped to rewrite our understanding of the landscape at that stage. The discovery of this mammal, belonging to a group which was thought to only exist in Europe, reveals that the two continents were connected by this stage, without any natural barriers, as a result of the disappearance of the ancient Paratethys Sea.

Changing geographic influences

A study led by the Institute of Geology of the Russian Academy of Sciences found the remains of this ancient rabbit ancestor in south-eastern Siberia. Its discovery represents an important biogeographic link that confirms the widespread distribution of this group, as well as the changing geographical relationship between Asia and Europe during this period.

"*Amphilagus* is a genus that was traditionally thought to only exist in Europe, but remains of this mammal were recently located in Asia. The discovery of this ancestral rabbit on the Asian continent indicates that there were some palaeogeographic and environmental conditions that favoured the expansion of this species in an easterly direction," explains Chiara Angelone, a researcher at the Catalan Institute of Palaeontology, Miquel Crusafont.

According to the team's findings, the Miocene epoch – which began 23 million years ago and



A representation of *Amphilagus tomidai*, and the area of Siberia where its remains were found.

COURTESY JOSÉ ANTONIO PEÑAS (SINC)



ended 5.3 million years ago – gave rise to the barrier-free linking of Europe and Asia which would have allowed for the spread of this early rabbit. The Paratethys Sea, which was located to the south of Europe and extended from the northern Alps to the Aral Sea in western Asia, had disappeared.

With a lack of high mountains there, this also meant that there were no barriers to hinder the

expansion of the species from Europe across Asia. The open landscape, and the relatively cool, dry climate were other factors that favoured the easterly spread of *Amphilagus tomidai*.

"These ancient animals and their distributions help us to better understand the climatic and paleogeographic conditions of that period in time. Some discoveries add new insight into what we already know. Others, such as this one, uncover remarkable stories," explains Angelone.

Anatomical features

Amphilagus tomidai is unique in another way too, relating to its distribution. It is also the northernmost Eurasian specimen of the *Amphilagus* genus yet to be discovered, and was a large lagomorph with primitive features. Its teeth have roots and do not grow continuously, in contrast to the teeth of present-day lagomorphs – a group of mammals consisting of rabbits, hares and pikas.

This newly discovered animal also possessed a simple, lower third premolar tooth and a hypoconulid – an additional cusp at the back of the mouth – among its lower molar-like teeth. The *Amphilagus* genus itself had first appeared in Europe during the Upper Oligocene, some 10 million years before *Amphilagus tomidai* existed. ■



The coastline of modern-day Europe and Asia is highlighted here in black, with the existing land masses in yellow, revealing how much of today's continents were covered by the Paratethys Sea. The emergence of land enabled *Amphilagus tomidai* to move eastwards.

Further information

Margarita Erbajeva, Chiara Angelone & Nadezhda Alexeeva (2016) "A new species of the genus *Amphilagus* (Lagomorpha, Mammalia) from the Middle Miocene of southeastern Siberia" *Historical Biology* 28:1-2, 199-207 DOI: 10.1080/08912963.2015.1034119

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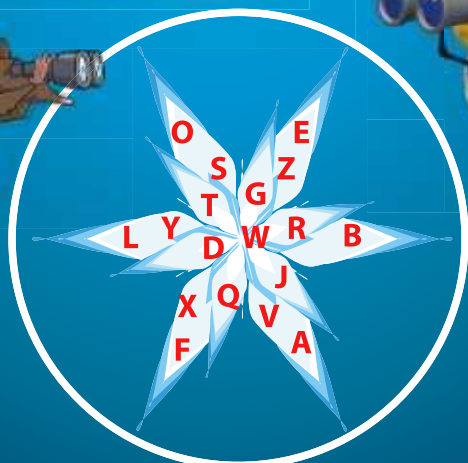


Puzzle page



See if you can solve the range of puzzles here, some of which are easier than others! You can find all the answers on page 58.

GONE MISSING!



Pick out and rearrange those letters of the alphabet missing from the flower to spell out the name of a rodent pet.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

AIRY

APSE

CONS

FIRST UP

Find five letters of the alphabet, each of which might be placed RIGHT AT THE START of three different words in the grid, left, to form three longer words. Then rearrange all five added letters to spell out the name of a country to which the wild chinchilla is native. The H forming HAIRY, HITCH and HOVER will give you one of them.

DEAL

HAIR

ITCH

LAMA

LAMP

LOPE

MEND

OAFS

OVER

RATE

RIBS

VENT



HONEYCOMB

Enter the six-letter solutions to the clues CLOCKWISE around all the appropriate numbers in the grid so that they interlock, producing, around the black centre, the name of the family to which the sugar glider belongs. Three letters are entered for you.



CLUES

- 1 Doctor partner of Sherlock Holmes
- 2 Nobby, 1966 England World Cup winner
- 3 Building housing articles of historical interest
- 4 Modern name of the Indian city of Bombay
- 5 Unfortunate accidental occurrence
- 6 'The Godfather' actor, Al

BUNNY SHOWS

The listed rabbit show venues have been hidden - up, down, across, diagonally back and forth - in our wordsearch grid. One though has gone missing - which show is it?

C	O	V	E	N	T	R	Y	N	H	W
P	I	M	C	U	R	L	O	W	A	P
K	S	I	M	A	H	T	N	A	R	G
E	E	A	A	N	U	S	K	Y	R	I
L	U	L	N	L	Y	O	M	N	O	P
S	Q	T	S	D	I	R	O	R	G	Y
I	H	R	F	O	B	S	U	D	A	T
L	A	U	I	V	N	A	X	B	T	Y
R	R	R	E	O	J	I	C	L	E	W
A	W	O	L	S	I	N	G	H	A	M
C	O	B	D	L	L	A	S	L	A	W

BURY
CARLISLE
COVENTRY
GRANTHAM
HARLOW
HARROGATE
KELSO
LONDON
LUTON
MANSFIELD
SANDBACH
TRURO
USK
WALSALL
WOLSFINGHAM
YARM

Points about rabbits



Our understanding of rabbits and their lifestyles has advanced dramatically over recent years. Here **Anna Tipton** gives a topical overview of how scientific studies of this type have influenced our view of their care needs, along with advice on what you need to consider if you are thinking of keeping rabbits.

Pet rabbits are now the third most popular pet in the UK (after dogs and cats) with 2% of households owning them, according to the recent Pet Food Manufacturers' Association report. Increasingly, people are seeing rabbits as great companion animals in the home, rather than just following the traditional view of keeping them outside in hutches.

However, despite their growing popularity, it is thought that many rabbits

Below: Rabbits appeal to owners of all ages, but children will probably need adult help and encouragement to look after their pets at times. This therefore means that acquiring pet rabbits needs to represent a family commitment.

still have needs that are unmet - often simply because they are unappreciated by their owners. By drawing on the latest studies and research though, this can help when it comes to fulfilling our pets' needs and allowing them to behave in as natural way as possible.

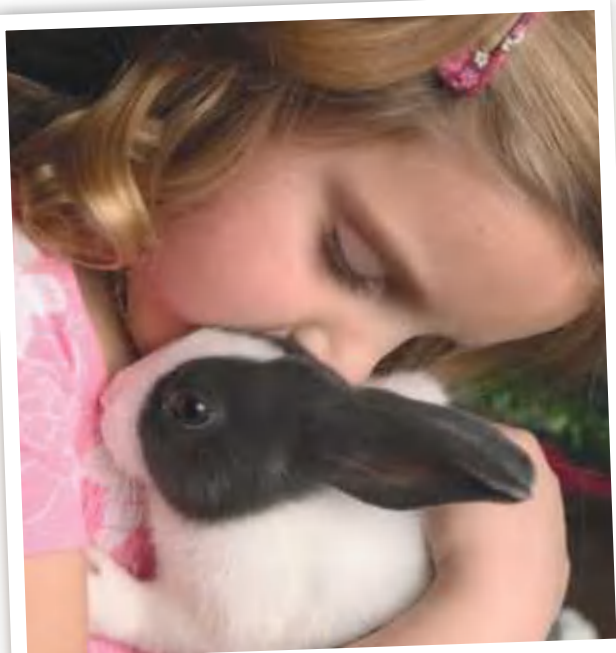
Rabbits in the wild

Rabbits are very social animals and live in groups in the wild. They can be found in a variety of habitats, usually creating a system of burrows that make up their so-called warren. Although pet rabbits can live up to around 10 years of age, many rabbits in the wild may not live for as long as a year of age due to predation, road accidents or illness.

Rabbits are well known for their ability

to have lots of young and can have many litters in a year, especially if resources such as space, food and water are readily available. As a result, it is very important not to keep male and females pet rabbits together unless they are neutered!

Their gestation period is 30 days and typical litter sizes consist of between four and seven kits (the name given to the young). They are born blind and without any fur but are quick to develop, reaching independence at around 30 days old. In the wild, mother rabbits visit their young as little as once or twice a day, staying for just short periods in order to feed them. Although this may seem like bad mothering, it actually helps to ensure the survival of the helpless youngsters, as there is less chance of predators discovering the



Young rabbits have a much shorter lifespan on average, compared with their domestic counterparts.



Puffins will take over rabbit burrows on Skomer Island when breeding.

nest if the mother is only occasionally and briefly present.

Rabbit warrens and their layouts

These can extend as much as 3m (10ft) underground and usually have many different holes by which the occupants can enter and exit. Rabbits tend to feed close to their warrens so as to be able to escape from danger quickly. These can be quite complex in structure, with tunnels being quite narrow, providing just enough room to squeeze through, while others have multiple pathways.

This type of construction helps to aid rabbits in escaping from potential predators like stoats. However, sometimes stoats can take over a rabbit warren, using the interior for themselves. Rabbit warrens are also adopted by other species, as on

the Welsh island of Skomer off the coast of Pembrokeshire where seabirds in the guise of puffins and Manx shearwaters sometimes use them as nesting sites.

Interestingly, rabbit warrens can vary in size and complexity, depending on whether they are situated in rural or urban areas. In rural areas, warrens tend to be large and have many entrance/exit holes. They also tend to house bigger groups of rabbits which helps them to stay warm in cooler months of the year. However, in urban areas, warrens tend to be smaller and less complex structures, usually inhabited by fewer rabbits.

This difference may have arisen because in rural localities, there are more risks from

predation so warrens need to be complex to afford better protection to their occupants. The presence of so many entrances and exits gives the rabbits a greater chance of escape or making it back to safety. On the other hand, in urban areas like cities, temperatures naturally tend to be a little higher and so keeping warm proves to be less of an issue.

The study also found that in urban areas, burrows tended to be closer together than those in rural areas which could be the result of food being more readily available, thanks to human food wastage and gardens, not to mention the fact that some people enjoy feeding wild rabbits, just as they do foxes or hedgehogs.



Above: Rabbits do venture into the fringes of towns, such as parks, but their social structure and lifestyle is different in these surroundings.

Rabbits as pets

Usually the construction of the warren is carried out largely by the female rabbits, and you may see this desire to dig in the behaviour of pet rabbits too - especially does. It is therefore important to make sure their run is secure, especially to prevent them from digging underneath it and potentially escaping from your garden.

A wire base set below ground level which cannot be dug through is one solution, or alternatively, slabs or concrete are sometimes used around the perimeter. Even if you think your garden is secure enough, and that your rabbit cannot get any further, don't forget about potential predators such as urban foxes and even



Above: This pet rabbit has started to dig a hole in the lawn.



pet cats which may try and catch a rabbit. This will cause your pet a considerable fright at the very least.

In order to help to satisfy a rabbit's natural desire to dig, you can create a safe burrowing area by using a large box or storage basket. The box should have high sides to keep burrowing material from spilling out, yet it should be easy for your rabbit to move in and out. Treats can be hidden in the box to help interest rabbits.

Various types of burrowing material may be used, such as soil, shredded papers and hay for example. Soil may be less suitable if you have the burrowing box inside as it is likely to create more mess, even with a high sided box, and can stain a rabbit's fur temporarily as well. Nevertheless, you could grow some grass seed on top – grass seed as sold to cultivate for cats is suitable for any small furry pet.

Housing requirements

In the wild, rabbits have plenty of room to explore and exercise. Some studies suggest they can run the equivalent of



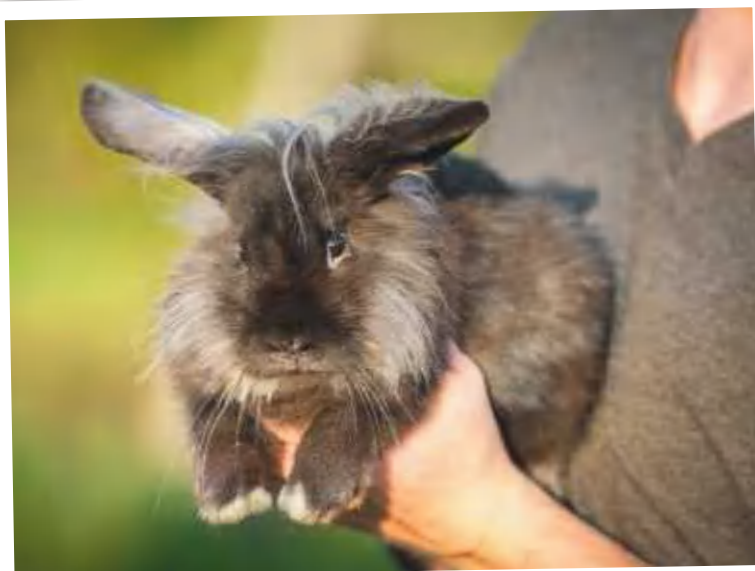
Above: A rabbit shelter in a large paddock, which offers plenty of exercise. You need to be sure that foxes, dogs and other dangers - including birds of prey - will not be able to harm your pets here though.

5km (3ml) or more a day. In hutches, the space that rabbits have is far more limited, and so it is impossible to meet the exercise requirements of wild rabbits by keeping your pets just in a hutch. Allowing your rabbits to have free-range time is crucial to trying to meet those needs, as well as being great fun, helping you to bond with your pets out of their quarters.

Rabbits usually can be litter trained, which makes free-ranging in the house also an option. However, it is important not to leave your pets unsupervised or with anything that could cause them harm. Items such as electrical cables should be disconnected and placed out of reach as far as possible, or concealed behind ducting. Some houseplants can be poisonous to pets so always keep them up high as well, or put them in another room where your rabbits cannot access them.

Although free-range time is important,

Left: Rabbits with longer coats will need more grooming than their short-coated relatives.



House rabbits may spend a lot of time free-ranging around your home, but they will still need secure housing in the form of an indoor hutch on occasions.

problems and weakness, as it helps to regulate the absorption of calcium into the body. Allowing your rabbits time outdoors in a secure run on a roof-top space when the weather is fine, or supervised time in the garden, can help to prevent this becoming a problem.

Communication

Rabbits are usually thought of as being quite quiet; however, they do have various means of communicating their needs. One obvious way of communicating is through thumping the ground with their hind legs, which is usually a way of alerting others of danger. They can also make grunting noises – usually as a reaction to something that displeases them or if they are angry.

Rabbits can also make noises which are described as 'purring', allowing them to express contentment. Another way rabbits show their happiness is described as 'binkying'. This is where a rabbit leaps into the air and twists. Some rabbits exhibit this behaviour more often than others, usually outdoors in a run where they may have more space available. However, loud grinding of teeth usually shows that the rabbit is unhappy and in pain, so it should be seen by a vet to determine the problem.

Rabbits have scent glands on their chin and you will often see them rubbing on different things. This leaves a scent (that is undetectable to us, but very apparent to other rabbits) which marks out their territory. Rabbits may also indicate their territories through spraying of urine and leaving droppings, although behaviour of this type is often reduced by neutering.

most rabbits will still end up spending a lot of time in their hutch or cage when you're not at home with them. It is therefore important to have as big a hutch as possible. There are many options available now including some designs with tunnels linked into them, connecting to other areas. These can be made as big as you like by adding more connecting tunnels and can be great fun for rabbits.

Alternatives include converting a children's Wendy house or shed into rabbit accommodation.

As a basic guideline, the RSPCA and other rabbit welfare organisations state that hutches should be big enough to allow a rabbit to stand on its back legs without its ears touching the top of the hutch. There must also be enough room for a rabbit to perform three consecutive hops and enough room for it to be able to lie outstretched in any direction. This is only the minimum that they recommend – bigger accommodation than this is certainly appreciated by such active animals! Aim to provide your pets with as much space as possible.

As mentioned previously, rabbits in the wild live in groups. Regardless of how much attention we can give our pet rabbits, this can never replace the companionship of another member of the same species. Because of this, it is important to keep rabbits in pairs or groups. However, bear in mind that hutches need to be correspondingly bigger to reflect the number of rabbits in the group, giving them plenty of space if they want to be alone as well as to interact at other times. If you have a single rabbit, and want to introduce it to a companion, many rabbit rescue organisations can give help and advice on bonding rabbits successfully.

Although house rabbits have gained in

Below: Even house rabbits benefit from being outside on occasions, particularly if they do not have special lighting in the home.

popularity over recent years, studies suggest it is still very important to give them time outside too. This is because of the risk of a resulting vitamin D deficiency if they are kept permanently inside and without access to sunlight, (depending on their food sources). Ordinary glass blocks the beneficial UVB radiation which helps in the manufacture of this vitamin in the rabbit's skin.

A vitamin D deficiency can cause dental disease, cardiovascular problems and immunity issues, although it is perhaps best-known for being an underlying cause of skeletal



A bonded pair of rabbits will be quite content in each other's company.



“ it is still important to bear in mind the amount of time they need daily if you are considering getting pet rabbits, as well as the potential costs involved, including veterinary fees ”

Above: Rabbits have a number of different ways of communicating with each other.

What to remember

Rabbits do make very interesting pets and have really grown in popularity over recent years. However, it is still important to bear in mind the amount of time they need daily if you are considering getting pet rabbits, as well as the potential costs involved, including veterinary fees. With rabbits likely to live up to 10 years of age, the sums involved can add up quite considerably in their lifetimes. This is especially true when keeping two or more bonded rabbits together, which is very important in the case of this highly social species.

As well as the usual day-to-day costs of food and bedding, rabbits need regular vaccinations against myxomatosis and viral haemorrhagic disease (VHD). Neutering, plus other potentially unplanned vet trips for dental care for example, will add to the bill. It can be worth looking into the various forms of pet insurance now being offered for rabbits therefore, before starting out with your pets or soon after acquiring them.

Always think about and look into what is required before taking on rabbits or indeed, any small pet. It is very easy to get enthusiastic about keeping rabbits on a warm spring day, but it can be quite a different proposition cleaning out your pets when it is pouring, or changing water bottles repeatedly through the day to prevent them becoming blocked by ice during a cold snap in winter. Rabbits represent a year-round commitment, and are not just for Easter! ■

Veterinary care can significantly increase the cost of keeping pet rabbits, particularly if you are unfortunate enough to have a rabbit that has a chronic dental problem for example.



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The cutest mouse in the world?

They might only be tiny, but they do have an adorable appearance! Harvest mice make fascinating albeit not touchy-feely pets, as **Rob Knowlitt** reveals.

Background briefing

The harvest mouse (*Micromys minutus*) is the smallest British rodent. These tiny creatures have long, prehensile tails which they use for balancing and climbing purposes. They can support their weight relying in part on their tail to provide an anchorage point as required, which helps them to move around safely off the ground.

When fully grown, harvest mice weigh in at only 4-6g (0.14-0.21oz) and are just 5-7cm (2-2.75in) long. Like many rodents, their underparts are paler, as they have white fur on their bellies and brown fur on the rest of their bodies.

Although typical photos of harvest mice show them sitting on or eating ears of wheat, their diet actually consists of a wide variety of different seeds, shoots, insects and fruit. In fact, they have to be flexible in their appetites as the decline of traditional farming methods means that spilt cereal grains and the availability of field margins for scavenging are scarce.

These mice use their tails rather like an extra hand.



Above: The classic view of a harvest mouse feeding on an ear of wheat, although their diet is actually much wider.

PHOTO COURTESY OF THE AUTHOR.

These rodents face a very hazardous existence in the wild. Here they rank very low down the food chain, with everything from foxes and birds of prey through to large toads finding them a tasty snack. By necessity, they are therefore shy creatures and because of their tiny size, they are extremely hard to spot in the wild. This means that keeping track of their populations is very difficult, but they are thought to be in decline.

Nevertheless, there is a thriving captive population, helped in part by the prolific breeding behaviour of these

mice, and they can be acquired quite easily from private breeders, and some pet shops sell them too. It may pay to have experience keeping ordinary fancy mice first, although this is not essential. Just be certain that you appreciate the differences in their behaviour though, with harvest mice being more suitable as pets to observe, rather than handle.

Habitat

Harvest mice are best accommodated in tall glass vivariums, measuring approximately 30x30x45 cm (12x12x18in), with very fine mesh tops and hinged doors opening at the front. Traditional rodent cages with bars are

emphatically not to be recommended for these tiny mice, as they will easily escape from them.

On the base of their quarters, put about 5cm (2in) of material taken from a grow-bag (as sold in a garden centre), although let its contents dry out first, as they can be saturated with water which is not to be recommended for the mice. Alternatively, you could use a little dry peat instead.

The idea is to create a natural appearance within their quarters. You can also use hay, grass, moss and chipped bark in any combination on the bottom of their accommodation if preferred. They will rapidly create little tunnels and nests within these substrates – which is entertaining to observe through the glass.

Give the mice lots of things to climb up (as they love climbing), with the aim of creating a multi-layered habitat for them. You can use natural garden twine attached to bark or branches of suitable size, which themselves can be held on to the glass sides of the enclosure by suckers with hooks. You need to be sure that everything is secure and will not collapse, taking the mice with it.

Harvest mice also love to have plenty of fresh and varied items from the garden. Flowers and unripe seeds of all kinds can be offered, with dandelion seed heads before they open being very popular in my experience. They are especially fond of the tender shoots of grass as well – grab a handful and you will find that the pale bases are rapidly eaten, along with any mosses that you can find.

Items such as twigs to climb up, leaves, pieces of old rotting wood and anything interesting and ideally a little smelly appeals to harvest mice, as they seem to be largely led by their noses. It is good practice to add items from your garden if you have one, as they seem to enjoy the natural smells here so much and it keeps them entertained.



Above: Harvest mice will eat flower petals.

Right: Seedheads such as millet sprays will keep harvest mice occupied for long periods.

Below: An adult harvest mouse, resting on a man's thumb.



Harvest mice tend not to eat a lot of fruit.

The mice will also benefit from opportunities to explore. You can offer a variety of cardboard tubes for this purpose, which they may also gnaw, and a closed exercise wheel will be readily adopted. They really seem to enjoy using such wheels and will benefit from the exercise.

The good news, in terms of cleaning out their quarters, is that harvest mice do not smell as much as fancy mice. Within a living room environment, it will probably only be necessary to strip down and clean their quarters thoroughly every 6-8 weeks, although obviously, you will need to remove any rotting food items well before this stage.

Diet

The diet of harvest mice should be comprised mainly of a mixture of as many types of bird seed as possible. Millet sprays (seedheads, as more typically sold for budgerigars) can be suspended off the roof of their quarters,

with the mice then clambering around the branches here to reach the seeds which they adore.

They are also partial to black sunflower seeds, which they seem to enjoy nibbling out of their shells releasing the kernel and then eating it rather like a corn-in-the-cob. Only offer sunflower seed in relatively small amounts, however, because it is an oil seed rather than a cereal, and so has a higher fat content than the various types of millets for example.

In addition, harvest mice will also eat traditional rodent feeds readily, and are



fond of crusts of wholemeal bread, which they will nibble, and also pieces of cucumber. Strangely perhaps, they seem not to be very fond of either berries or fruit.

They quite like to eat the squishy flesh from grapes (leaving the skin), but are totally disinterested in native hedgerow fruits, such as blackberries, hawthorn berries and even strawberries and raspberries. I am not sure whether they eat them in the wild when seeds are less available, or whether our domesticated strains are just strangely fussy.

Interaction

I do not believe that keeping harvest mice in collections has had a very great impact on their wild instincts to date, and it would appear that they tolerate human intervention rather than becoming greatly changed by this association.

When you handle harvest mice, be wary as they are extremely quick and agile, and if they want to avoid you, they easily can! Older mice seem to be more reluctant to engage with their keepers than younger individuals, but this is not always the case.

Some mice have a funny but cute habit of sitting on your hand often with their tails curled around the fingers here to provide additional support. They may give a little nip on occasions until they get used to handling, but generally they will soon accept interactions with people on a limited basis.

Sleeping

Harvest mice build themselves small spherical nests from dry grass, moss or unravelled twine. They often sleep together in piles, especially when young, sometimes perched quite precariously in position. I find it amusing when one mouse halfway down decides to shift, making the whole mouse-stack reorganise itself! You can also buy ready

As always, winning the confidence of these mice from an early age is recommended for handling purposes and particularly if they are allowed out of their quarters.



Above: Harvest mice build themselves nests where they sleep together.

Right: These rodents are prolific when breeding, and accurate sexing is therefore vital, to prevent a population explosion.



made basket woven sphere bed houses from various pet stores, which the mice can adapt with their own material to make a suitable cosy nest.

Breeding

These mice can be described as prolific when it comes to breeding, and will do so repeatedly if given the opportunity. This is a reflection of the fact that in the wild, they lead such a precarious life. Females generally have litters numbering between 5 and 7 babies.

Prior to giving birth, the female will build a larger spherical nest, and gradually becomes increasingly bulky until she ends up looking rather like a ping-pong ball with a head, just before giving birth. She retreats into the nest and gives birth here, with the young being tiny and hairless at birth. Try to restrain your curiosity and avoid disturbing them at this stage, as you may cause the female to attack or abandon her litter under these circumstances.

She will feed them regularly over the next 11 days as their eyes open and their fur develops, before they hesitantly emerge from the nest, typically at 12 days of age. They are tiny, wobbly and struggle to keep their

balance when clambering around at this stage, but provide great entertainment if you are able to watch them. Their mother soon tires of her maternal duties a few days later, by which stage they will be fully weaned and able to fend for themselves.

Sexing

Sexing harvest mice is very difficult because of their size and speed of movement, with the consequence that they will not stay still for any length of time. Yet accurate sexing is vital, to prevent unwanted litters. The technique that I use is to put them onto a cooling rack (metal grid), and lift them up high so I can see their undersides clearly as they move.

Generally, they will stretch out a little after a short time, and calm down, making it easier to observe them. There may be either tiny nipples, arranged in two rows, or a slightly squarish rear end that will become apparent. I try to do this before they are two weeks old, and then keep the sexes segregated unless I want to breed from them. In terms of their lifespan, harvest mice do not live very long, even in collections, with a maximum lifespan of 18 months being typical. ■

Below: Young harvest mice need to learn how to climb effectively and maintain their co-ordination.



On the trail of...

small animal mysteries



With a wing and a purr

Small furry pets have enough cause to fear cats in any case, but what if their nemesis could fly? This would undoubtedly make life even more uncomfortable. In the first of a two-part article on this subject, **Dr Karl Shuker** reports on the surprisingly large number of cases of winged cats that have been documented from various countries around the world.

In November 1899, London's *Strand Magazine* published a photograph of a most unusual cat. Owned by a lady from Wiveliscombe, Somerset, it seemed just like any other ordinary household moggy, apart from one very dramatic difference. Sprouting from its mid-back, at a point roughly midway

Below: The original report on the Wiveliscombe case, with a photograph of the cat in question.
SOURCE PD.

between its shoulders and its haunches, was a large pair of furry wings!

Amazing as it might seem though, this was neither a hoax nor a unique case. As will be revealed in this article, over the course of the past two centuries, many other, perfectly genuine examples of winged cats have been documented around the world. Yet for many years, such cases have baffled scientists and the general public alike.

Winged cats from around the world

The earliest record that I have so far found of what appears to be a genuine winged cat exhibits all the characteristics of the more famous examples that would be documented decades later. In 1854, the celebrated American writer Henry David Thoreau published a book entitled *Walden; or Life in the Woods*, which recounted the two years that he had purposefully spent



American writer Henry David Thoreau is believed to be the first person to record and describe a winged cat. SOURCE PD.

living apart from the rest of the world in a self-built cabin amid woodlands by the shores of Walden Pond in Concord, Massachusetts.

In his book, Thoreau recalled that in 1842, a very peculiar cat lived in a Lincoln farmhouse owned by a Gilian Baker close



On the trail of...

small animal mysteries

to the pond. The cat's sex was unknown, but was referred to for convenience by Thoreau as 'she', and according to her owner, this individual had first appeared in the neighbourhood during April 1841, before eventually being adopted by the Baker family. She was specifically referred to locally as a 'winged cat' - and for good reason. Thoreau's description of her was as follows:

"...she was of a dark brownish-grey colour, with a white spot on her throat, and white feet, and had a large bushy tail like a fox; that in the winter the fur grew thick and flatted out along her sides, forming stripes [often misquoted as strips] ten or twelve inches long by two and a half wide, and under her chin like a muff, the upper side loose, the under matted like felt, and in the spring these appendages dropped off. They gave me a pair of her "wings", which I keep still. There is no appearance of a membrane about them. Some thought it was part flying-squirrel or some other wild animal."

Nevertheless, however strange a winged cat might seem, it pales into insignificance beside a crossbreed of cat and flying squirrel, which is truly a zoological impossibility for fundamental taxonomic, genetic, and behavioural reasons!

English reports from the nineteenth century

Meanwhile, on 3 August 1894, Cambridgeshire's *Independent Press* newspaper carried the following intriguing report:

"A live cat with wings resembling those of a duckling is now being exhibited in the neighbourhood by Mr David Badcock of the Ship Inn, Reach [near Peterborough].



Above: Wings are not just linked with domestic cats. The winged lion is the symbol of the Italian city of Venice.

The cat which is a year old did not until recently expose such a remarkable freak of nature, but being somewhat roughly handled spread out its wings. The owner charges the sum of 2d [equivalent to 1p today] for callers in the daytime to see such a strange beast and has commented taking it round the neighbouring villages in the evenings to exhibit."

Sadly, however, it seems that Mr Badcock made too much of a show of his marvellous moggie, because a week later the *Independent Press* then reported that it had been catnapped!

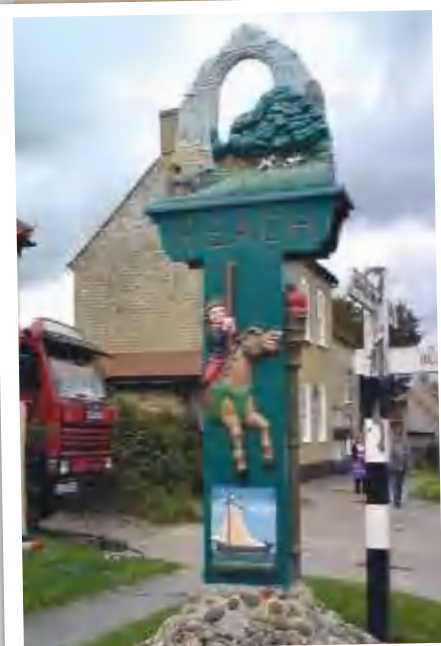
"The "Remarkable cat" reported in our last issue has been stolen. It is hoped however the thief or thieves will soon be run down, as the animal, our correspondent understands, has been traced to Liverpool."

Nothing more emerged regarding this story though, so whether the cat in question was reclaimed is unknown.

From Cambridgeshire to Derbyshire, and a report from 26 June 1897 in a Matlock newspaper, the *High Peak News*, that described a doubly-strange winged cat. It had been shot by a Mr Roper of Winstar, who had seen it on Brown Edge and mistook it for a fox. According to the newspaper report:

"It proved to be an extraordinarily large tomcat, tortoiseshell in colour with fur two and a half inches long, with the remarkable addition of fully-grown pheasant's wings projecting from each side of its fourth rib...Never has its like been seen before, and eyewitnesses state that, when running, the animal used its wings outstretched, to help it over the surface of

Right: Tortoiseshell cats in general are exclusively female - males are very rare, and the winged tortoiseshell male reported would almost certainly have been unique.



Left: The village where the winged cat was stolen. PHOTO COURTESY RICH257.



the ground, which it covered at a tremendous pace."

Ironically, the most unusual characteristic of this particular cat is not its "pheasant's wings", which is probably no more than a fanciful way of describing long filamentous expanses of furry skin (as opposed to feathers!), but rather its sex. Due to the tortoiseshell condition being a sex-linked genetic mutation, virtually all tortoiseshell cats are female, thus making a male tortoiseshell cat if anything even more extraordinary than a winged cat!

More recent cases

A beautiful grey (=blue) Angora winged cat from Spain, called Angolina, enraptured the Madrid media during May 1950. Owned by Juan Priego, a porter living near to Spain's houses of parliament, Angolina had been purchased in a Madrid pet shop, but had originally come from Barcelona, together with her two normal, non-winged brothers. In June 1959, a second winged cat was reported from Madrid. Known as Michi, she was owned by an electrician.

Not surprisingly, Angolina's eye-catching appearance attracted all manner of explanations. The most memorable of these, however, must surely be the theory that she signalled the return of a race of prehistoric flying cats originating from before the Great Flood of Noah!

During the same year in England, an adult female tortoiseshell cat called Sandy gave her owners, and neighbours in Sutton-in-Ashfield, Nottinghamshire, a considerable shock when suddenly, without any previous warning, she began to grow a sizeable pair of wings on her shoulders! As a result, Sandy became so famous in the area that she was eventually displayed for a time in a local carnival.

Manchester's winged cat

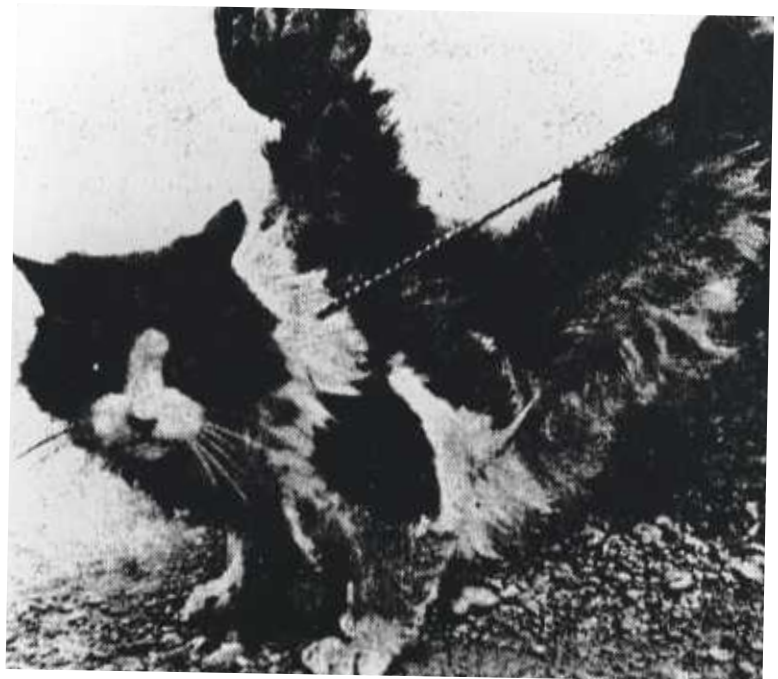
One morning prior to the 1970s, the Manchester builder's firm of Banister Walton and Co in Trafford Park received an uninvited visitor of a very unusual kind. A dark, fluffy kitten strayed into their yard,

Above: Trafford Park in Manchester was the home of a stray kitten who grew wings.

PHOTO COURTESY PARROT OF DOOM.

Right: A contemporary photograph of the Oxford winged cat, which was caught and taken to the local zoo. It has long 'wings', as seen here.

Below: The elongated teeth unsurprisingly resulted in the description of 'vampire cat'.



and when the foreman picked it up he noticed to his surprise that it had two furry growths on its back.

The kitten decided to make the yard its home, staying there for several years, and acquiring for the firm an appreciable amount of local publicity, because after about 12 months, the kitten's 'growths' had matured into a pair of 28cm (11in) long wings. And as if these were not strange enough, this peculiar animal's tail was also very odd. Instead of being long and slender like that of most cats, it was broad and flattened.

Although a star during its lifetime, Manchester's flat-tailed cat with wings was gradually forgotten after its death, until later workers at the building firm began doubting that it had ever existed! Happily, its reality was confirmed on 23 September 1975, when, responding to one such worker's request for proof, the *Manchester Evening News* published a photograph of this feline wonder.

Can they fly?

Sometimes, there have been allegations that cats like these can actually utilise their wings for flying! On 11 June 1933, for instance, the *Sunday Dispatch* newspaper published a photo of a black-and-white cat with extremely impressive wings

(arising from just in front of its hindquarters) which it could raise up and down. It had been found during the evening of 9 June, prowling in the stables of Mrs Hughes Griffiths of Summerstown, Oxford, who alerted Oxford Zoo.

Shortly afterwards, the zoo's managing director Frank Owen and its curator W.E. Sawyer successfully netted the animal unharmed, and took it back with them to the zoo. What makes this specimen particularly interesting is that according to Mrs Griffiths, it "used its wings in a manner similar to a bird", enabling it to leap considerable distances.

An even more spectacular winged cat was the fearsome specimen shot in northern Sweden during June 1949 after it had supposedly swooped down upon a child. However, it is highly unlikely that it actually "swooped" - it had, most probably, simply jumped on the child's back or shoulders unexpectedly from behind. Nevertheless, this specimen does have one special claim to fame, possessing the biggest wingspan on record for any winged cat - an astonishing 58cm (23in)!

The vampire case

Yet even these remarkable examples seem positively mundane in comparison with what can only be described as the feline



On the trail of...

small animal mysteries



The cat's identity and ownership had to be resolved in court, although it had lost its wings by this stage!

horror reported from the community of Alfred, in Ontario, Canada, during 1966. Black in colour, it was graphically referred to as a vampire cat, because it not only bore two 18cm (7in) long furry wings on its back, but also possessed a pair of lengthy, needle-sharp fangs protruding from its mouth.

Most bizarre of all, however, was the sensational claim made by local eyewitnesses that this eerie beast could truly fly - screaming ferociously as it soared above the ground on outstretched wings, scaring frightened onlookers, and

Below: Tests confirmed that the cat was suffering from the deadly rabies virus.

attacking normal, earthbound cats. Its reign of terror lasted for several weeks, but ended on 24 June, when it was shot dead by shopkeeper Jean J. Revers.

The body of Alfred's extraordinary 'vampire cat' was initially buried, but it had attracted such attention when alive that it was soon exhumed and made available for a scientific autopsy. This was performed on 30 June by Dr E.B. Meas, director of the Kemptville Agricultural School's veterinary laboratory nearby. When its supposed wings were examined, however, they proved merely to be a loose, ragged extension of matted fur, sprouting from the cat's lower lumbar region of the vertebral column and were insufficiently substantial to support any form of true flight.

Furthermore, the cat itself was found to have been almost starved, and rabid - explaining its insane, vicious attacks upon other animals and people. All in all, it was in such a poor state of health that it would certainly have been too weak even to walk or run properly, let alone fly - making even more puzzling the statements by eyewitnesses that it had indeed been observed flying, and over an appreciable period of time.

A custody battle

No less controversial, but for a very different reason, was a winged cat called either Thomas or Mitzi, the name depending upon which of the two parties claiming ownership of this curious creature was its rightful owner. The case went to court on 5 October 1959, in the

West Virginia town of Pineville, where teenager Douglas Shelton said that he had found 'Thomas' (actually a female cat!) in a tree during May of that year.

Disputing his claim was Mrs Charles Hicks, who stated that 'Thomas' was really her cat who was called Mitzi, who had run away from her home some time earlier. Before any ruling could be given, however, the case offered up a very surprising climax. When the cat was brought into the court as an official exhibit, it was found to lack the vital feature required by any *bona fide* winged cat. Thomas/Mitzi was wingless!

In July, the cat had apparently shed its wings, but they had been kept afterwards in a cardboard box, and were shown by Shelton to the judge. Following this shock disclosure, Mrs Hicks announced that the cat was not hers after all, and one of America's most unusual court cases was duly dismissed.

Cases from the nineties

In August 1995, Steve Volk revealed that several years earlier, while visiting the Isle of Wight off the coast of southern England, he had spotted a taxiderm specimen of a winged cat in a tourist attraction exhibiting other stuffed animals, as well as waxworks of historical people associated with the island. It would be interesting to see if this cat could still be traced. If any readers know of its existence, please email me c/o the editor, at sfp.ed@kelsey.co.uk with any information or photographs.

Also first brought to public attention in 1995 was a friendly tabby cat with very





A rear view of the Scottish feral winged cat, photographed by Derek Uchman.

fluffy fur that almost concealed its distinctive wings. Fortunately, however, they were noticed by Martin Milner, when he bent down to stroke the animal while passing through its home village of Backbarrow, during a holiday in Cumbria, northern England, in April 1995. He later learnt that the winged tabby belonged to Backbarrow's retired postman.

The latest reports

More recently, in May 2007, news emerged of a winged cat in China – the first recorded from that vast country. Owned by Granny Feng of Xianyang city in Shaanxi province, the white four-year-old tom with a handsome black and white face was the proud possessor of a pair of hairy 20cm (8in) long wings, and has been pictured in media accounts worldwide.

His wings began to form as a small pair of bumps in April 2007, but within a month, they had quickly grown into their much-photographed form. According to

Feng, they contain bone, but this is more likely to be gristle, or even hard pads of matted fur. Intriguingly, Feng also claims that her tom grew his wings after being harassed by many female cats in heat.

During 2008, a winged cat was reported in Oguz, Turkey. Owned by a Mrs Kuhak, this somewhat belligerent grey-furred specimen meows loudly whenever anyone comes to her door, then shakes its wings angrily if the visitor is not deterred – as confirmed in video clips recorded by Kuhak on her mobile phone and accessible on YouTube (at: <https://www.youtube.com/watch?v=5tbFyX0BIgE>). Happily, the enticement of a bowl of yoghurt offered by its owner is apparently sufficient to pacify this bizarre feline guard-dog.

More cases

Other examples on file include: a black-and-white winged cat from the isle of Anglesey, lying off the coast of northern

Below: Backbarrow in Cumbria, where the cat in question was spotted by a holidaymaker.



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Prul, a Dutch winged cat, reported in 2008.
PHOTO COURTESY MARTINE SMIDS.



Further information

Karl's latest book – *The Encyclopaedia of New and Rediscovered Animals* (Coachwhip Publications: Landisville, 2012) – extends to 370 pages and is packed throughout with rare colour and b/w photographs. It costs £24.95, is available in hardback from Amazon and can also be ordered through all good bookshops.



✧ **Dr Karl Shuker** BSc PhD FRES FZS is a zoologist, author and broadcaster who is pre-eminent in the field of cryptozoology – the study of animals whose existence is not proven.



* Email your queries to sfp.ed@kelsey.co.uk or write to our address on page 58. A selection of submitted questions and answers will appear here in each issue, and a prize of Vetark products will be awarded to the writer of the Star Question. Regrettably, replies can only be given through this column, and if you are worried about the health of your animal, seek veterinary advice without delay.

A hamster in trouble



My Syrian hamster managed to eat some salted peanuts that were on the table last week, and soon afterwards, he began to act strangely. His eyes did not open properly, and he seemed to be shaking. The following morning, I was so upset to find that he had passed away. He was two years old, and he hadn't behaved in this way before, although he was sleeping more than in the past. Could the peanuts have been responsible?



I'm really sorry to hear what happened to your hamster. Salt poisoning can cause a range of symptoms, which include the shaking that you observed. Tremors of this type and even seizures are not unknown in severe cases. However, one of the most obvious initial symptoms of salt poisoning tends to be a significant increase in thirst. An affected individual tries to dilute the increased level of salt in its body by this means, with the instinctive aim of flushing the salt out of its body via the kidneys in its urine.

A peanut allergy has not been recorded in hamsters, and so unsalted peanuts in small amounts are safe as treats. However, hamsters should never be given almond nuts as these could be dangerous for them, according to some reports. The difficulty is that there have been few studies into what is or is not harmful in the way of foods. It is always better to err on the side of caution therefore, and not offer items of this type that might

possibly endanger your pet's health.

Potentially harmful foods should be kept well out of a pet's reach, because a hamster will not necessarily appreciate the danger, and may steal salted nuts for example when you are momentarily distracted. The risk is particularly significant in the case of hamsters, because they will store nuts they have stolen in their cheek pouches, and so you may not necessarily be aware of what has happened until it is too late.

As to whether the salted peanuts were responsible for your pet's death, it is impossible to say with certainty, but the symptoms and the timing of his passing suggest that they could have been a factor. But given his age, your hamster was already quite elderly, and may not have been in the best of health anyway. If so, the chances are that his kidneys were not working efficiently, and ingesting this effective overload of salt may only have hastened his demise, rather than necessarily being the primary cause.

David Alderton



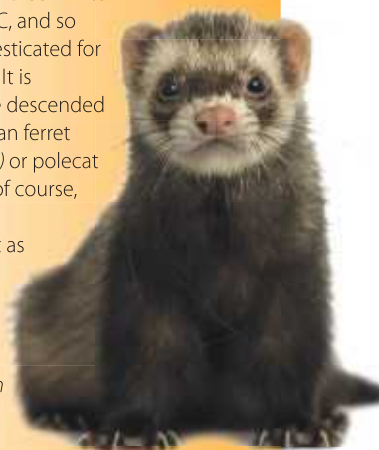
Keeping ferrets



When were ferrets first kept?

The ancient Greeks were responsible for their domestication, as a means of controlling the numbers of other small animals such as rabbits. Ferrets were first described by the Greek writer Aristotle in 350BC, and so have been domesticated for over 2,000 years. It is thought they are descended from the European ferret (*Mustela putorius*) or polecat (*M. furo*). Today of course, ferrets are being increasingly kept as pets rather than working animals.

David
Alderton



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Lighting for rabbits

Q&A

I am wondering if you can provide me with any advice on lighting for my pet rabbits. During this terrible wet weather, they have been indoors running around in my shed during the day,

rather than outside, but I am worried about the amount of natural light they should be getting. Is there a light that I should be using for them to provide them with their vitamin D3 which they are missing out on in their current quarters?

Yes, it's been a particularly difficult time for rabbit (and guinea pig) owners and their pets this winter. When it comes to lighting, the idea should be to match your pet's core biological need for UVB light in a safe and measured way. Rabbits, like most animals, have developed to make use of the energy of the sun, enabling them to manufacture vitamin D3 in their bodies. It therefore makes sense to provide suitable lighting for them when sunlight is limited for whatever reason.

In terms of rabbit behaviour, we know that they display both diurnal and nocturnal tendencies, being active for periods through the day and at night. In the wild, they can also be observed sunbathing, albeit briefly because of the risk of attracting predators.

Rabbits are of course mostly covered with fur, which protects against sunburn. Most UV

absorption will occur through their ears, where bare skin is exposed. As with other mammals, sunlight with its UVB component falling here creates vitamin D3 in the skin, which is then used in hundreds of processes in the body, including acting to trigger the absorption, storage and use of calcium.

Both calcium and vitamin D3 are essential for life, and both have an interaction in ensuring the health of skin, nerve tissue and bone, quite apart from healthy muscle contraction. A deficiency of vitamin D3 therefore does not simply reduce bone density, but also has a direct and detrimental effect on muscle contraction and vital organ function. In chronic cases of deficiency, even the contraction of the heart is adversely affected.

When it comes to lighting your rabbits' quarters, the aim must be to provide a safe and measured quantity (or 'index') of UVB. This should form part of what is described as the 'light and shade method', allowing the animal to self-regulate its

own level of exposure to the light source, rather than keeping it constantly exposed. Rabbits of course only spend part of their day above ground in sunlight, being hidden away in their warren for periods as well.

In this case, I would recommend our ParrotPro fitting (please don't let the name put you off: it is the perfect product for your purpose as well!) fitted safely with the cables shielded from the rabbits. Position this to create a distance of 30-38cm (12-15in) between the lamp and the rabbit's back at this "basking" point. This is a complete kit which can be affixed to a bracket or with the optional stand AO15 placed above a basking point.

Run the system for about 10 hours a day, with a break of an hour or two at midday. You can operate the lighting automatically using a timer if required. You also need to change the UV lamp once a year to keep the system active.

John Courteney-Smith, MRSB, Arcadia Lighting



Handling a rabbit safely

Q&A

Our rabbit kicks rather badly when she is picked up. Is there anything that we can do to pacify her?

Firstly, be sure that you are holding her properly, supporting her body weight from beneath rather than leaving her dangling in mid-air. This is very important, especially as some rabbits are even heavier than small dogs, and may end up being seriously injured as the result of careless handling. Try to tuck her body on your arm when carrying her, so that she is securely restrained, and be careful that she does not scratch you.

Never lift or support a rabbit by its ears, although you can hold these gently with one hand while picking her up underneath with the other, as this may help to pacify her. The cause of the problem could be that if you acquired your rabbit as an adult, she may never have been used to being handled regularly up until this point in her life.

This is also why it is always important, if you acquire a young rabbit, to accustom it to being handled from an early stage. There should then hopefully be no problems in future. With an older rabbit, it is a question of being gentle and patient. Some breed differences may be apparent as well, with lops in particular having relatively placid natures.

On the other hand, some individual rabbits do appear to be more aggressive than others in their daily lives, as well as kicking out when being handled. Bucks will sometimes fight viciously between each other, and they have even been known to launch sudden attacks on dogs.

If you have a particularly aggressive buck, you may well find that he becomes more placid having been neutered. A doe is most likely to become aggressive if she feels that her offspring are in any danger, so bear this in mind if you are breeding rabbits at any stage.

A rabbit's claws can draw blood, so it is usually recommended to wear long-sleeved clothing

when handling your pet, so as to give you some protection if it struggles. Also, make sure other pets, notably dogs and cats, are elsewhere, and so they will not alarm your rabbit.

Always supervise a child handling a rabbit, intervening if there is a problem. Bear in mind that some rabbits are too large and heavy for younger children to lift up safely on their own, so lift the rabbit up and place it alongside them when they are sitting down.

It is really important not to lose hold of your rabbit when carrying it, simply because a fall could easily paralyse it, as rabbits are susceptible to spinal injuries. When moving your pet from a hutch to a run therefore, it may be better to use a secure small animal carrier for this purpose.

David Alderton



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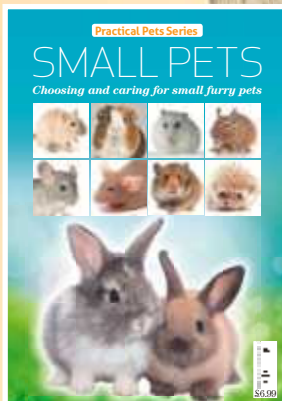
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you & your small pet

✿ If you have a favourite photograph of any of your small pets which you'd like to see included in the magazine, please email a high-resolution image to us at sfp.ed@kelsey.co.uk

Remember to tell us the name of your pet and confirm that anyone shown in the photo is happy for it to be published. Also, tell us where you live, because the best photograph, as judged by the Small Furry Pets team, will win a special prize. This month's winner will receive a free copy of our 100 page, full colour publication entitled *Choosing and Caring for Small Furry Pets*. You can also order a copy by calling 08454 504920 or buy online at www.kelseyshop.co.uk The cost is £6.99 +£2 p&p for the UK (overseas rates vary).



**STAR
PICTURE**

Natalie's well-behaved guinea pigs. LR are Kiki, Lily, Luna, Emmy, Nellie and Herbie.

Emmy (the brown agouti) and Herbie. Sent in by Natalie from Kent.



◀ Netherland dwarf rabbits called Dixie, Misty, Molly, Millie and Dolly. Sent in by Louise for daughter Charlotte.



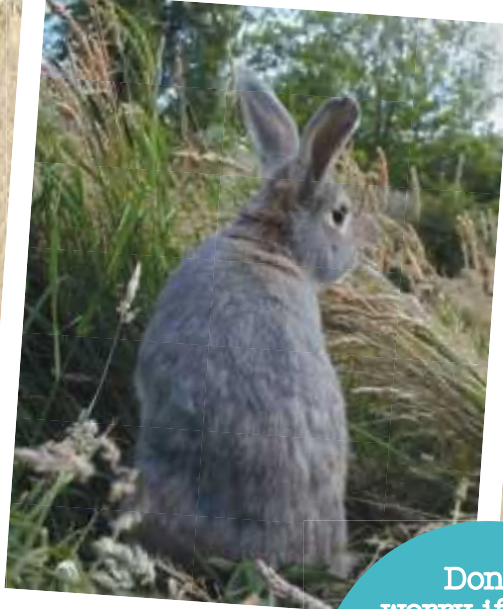
Evie in Easter mood. Sent in by Tracey from Lowestoft in Suffolk.



▲ Guinea pig Pip delivering Easter eggs to Tracey and family.



▲ Charlotte's guinea pig gang!



Don't worry if your photo isn't included here.

We've had such a fabulous response that we've had to hold some photos over to feature in subsequent issues.

▲ Four year old **Finley** with his best buddy **Emmett** the hamster.



▲ Bunnies **Bunnie** and **Minnie**. Sent in by **Charly** from Kent.



► A close-up of **Herbie**, who is **Natalie's** beautiful guinea pig. They are from Southfleet in Kent.

▼ Swiss guinea pig **Fizzgig** enjoying his playpen. Sent in by owner **Sharon** from Cannock in Staffordshire.



▲ **Aurelia** with her much loved, late guinea pig who was called **Rosy**. Sent in by Mum **Taliah**, from Herston, Orkney.

*Sam's mischievous ferret hobs, called **Bandit** and **Loki**. They live in Bulkington, Warwickshire.*



► **Samantha's** African pygmy dormouse called **Radar**. They are from Bulkington in Warwickshire.



Lola, a rex guinea pig. From Tracey.



In our next issue...

DESIGNING YOUR OWN SMALL ANIMAL HOUSE

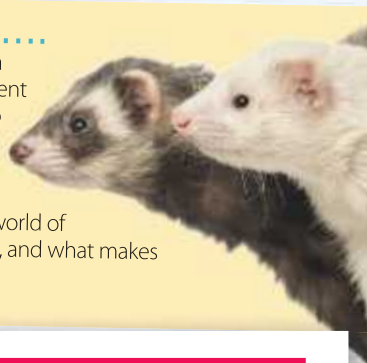
Would you like to have an outside building to house your small animals? What are the points that you need to bear in mind? We talk with someone who has built their own, so you can avoid the pitfalls!



PHOTO COURTESY DOUG CONNOR

Under orders....

It's a guaranteed draw as a spectator sport, to the extent that you should be able to see an event at a country fair or show near you. Here's your chance to discover more about the world of ferret racing, how it began, and what makes a winner.



Talking teeth

Dental concerns should be high on the list for the owners of rabbits and rodents. Discover what you should be doing to keep your pet's teeth healthy, and how to check for cases of malocclusion, which can have serious consequences.



True life tales - how my small pets helped me survive

The incredible impact that pets such as guinea pigs can have on our lives is the subject of this engrossing article, and we talk with a leading scientific body about small animal pet therapy, its limitations and what it can realistically achieve, in terms of helping those in need.

Plus all our regular features too!

Including Veterinary casebook, Me & my pet, Questions and answers, Small animal mysteries, Breed factfile, Discover small furry wildlife and, of course, a selection of your photos.

* These are just some of the features planned for the next issue but circumstances outside our control may force last-minute changes. If this happens, we will substitute items of equal or greater interest.



Puzzle page

FILLERS SOLUTION:
1 WATSON,
2 STILES,
3 MUSEUM,
4 MUMBAI,
5 MISHAP,
6 PACINO.
CENTRAL WORD:
POSSUM

BUNNY SHOWS SOLUTION:
C O V E N T R Y N H W
P I M C U R L O W A P
S I M A N N A I G
U E N O M Y E I
H E V I O M P
Q R I K D T
A V J X L W
W R E S I N G L E W
C O B L A S T A W

GONE MISSING SOLUTION: CHIPMUNK
FIRST UP SOLUTION:
CHAIR, CLAMP, CRIBS,
HAIRY, HITCH, HOVER
ICONS, IDEAL, IRATE
LAPSE, LLAMA, LOAFS
ELOPE, EMEND, EVENT.
CHILE IS THE COUNTRY.

Small Furry Pets and the Pet Advertising Advisory Group recommend that if you decide to buy a rabbit or any other similar pet, you should:

- ❖ **CONSIDER CONTACTING YOUR LOCAL ANIMAL RESCUE OR REHOMING CENTRE** There are thousands of healthy, loving animals of all ages throughout the UK who need a home
- ❖ **BE SURE YOU ARE KNOWLEDGEABLE ABOUT THE PET YOU ARE INTERESTED IN.** Your local vet should be able to recommend an expert. Never buy a pet on impulse
- ❖ **GO TO AN ADVERTISER who specialises in the pet of your choice**

- ❖ **BE PREPARED TO WAIT,** as the right pet is definitely worth waiting for!
- ❖ **MAKE SURE** your chosen pet is old enough to leave its mother
- ❖ **CHECK THAT THE FACILITIES ARE CLEAN,** there is adequate and appropriate bedding, toys and stimulation and that the animals appear alert and healthy
- ❖ **VISIT YOUR CHOSEN PET REGULARLY** between the time of choosing and collection
- ❖ **TRY TO ENSURE THAT ALL RELEVANT PAPERWORK IS AVAILABLE.** This could include the pedigree and registration papers, and a vaccination certificate in the case of rabbits particularly. If paperwork is unavailable when you collect your pet, and so has to be sent on later, get a written commitment as

- to when it will be delivered
- ❖ **ASK THE ADVERTISER FOR ANY RELEVANT WRITTEN MEDICAL HISTORY** of the animal. This is most likely to include vaccination details
- ❖ **REMEMBER THAT UNDER THE ANIMAL WELFARE ACT 2006,** a pet owner has a legal duty to ensure the welfare of his animal[s]. A pet's welfare needs include:

- ✓ **A PROPER DIET**
- ✓ **SOMEWHERE SUITABLE TO LIVE**
- ✓ **ANY NEED TO BE HOUSED WITH, OR APART FROM, OTHER ANIMALS**
- ✓ **ALLOWING ANIMALS TO EXPRESS NORMAL BEHAVIOUR**
- ✓ **PROTECTION FROM PAIN, SUFFERING, INJURY AND DISEASE**



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100% Natural Control & Daily Protection



Mr Johnson's

Mr Johnson's small animal foods are enhanced with **Verm-X** - a 100% natural blend of herbs, the natural way to control intestinal hygiene. **Verm-X** is formulated using a blend of 11 different herbs, chosen for their powerful and effective properties in supporting the intestines during periods of challenge. **Verm-X** is gentle on the animal's gut and digestive system and aids digestion.

Daily feeding with Mr Johnson's foods enhanced with **Verm-X** will help effectively control intestinal hygiene, an important area of animal husbandry that is often overlooked, helping towards the overall health and wellbeing of your pet.



Ask for Mr Johnson's® by name at your local Pet Store!

To find your nearest stockist please visit www.mrjohnsons.co.uk or contact us: 01476 577670 enquiries@mrjohnsons.co.uk

100% Natural

Verm-X®

Natural Control of Intestinal Hygiene

Available from your local pet and country retailer or online

An effective formulation for supporting intestinal health during periods of challenge



Equine



Smallholder Animals



Pets



Avian

Please call us or check our website for your nearest stockist www.verm-x.com ☎ +44 (0)870 850 2313 📧 sales@verm-x.com

Verm-X® is a product of Paddocks Farm Partnership Ltd, Somerset, TA4 2HQ UK